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No contribution reaching the Editor later than 10th December next can appear in the January Number of MIND.

NEW SERIES. No. 104.

OCTOBER, 1917.

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

PROF. G. F. STOUT,

WITH THE CO-OPERATION OF PROFESSOR E. B. TITCHENER, AMERICAN EDITORIAL REPRESENTATIVE, AND OF PROFESSOR WARD, PROFESSOR PRINGLE-PATTISON, DAVID MORRISON, M.A., AND OTHER MEMBERS OF AN ADVISORY COMMITTEE.

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PUBLISHED FOR THE MIND ASSOCIATION BY
MACMILLAN & CO., LIMITED,
ST. MARTIN'S STREET, LONDON, W.C. 2.

NEW YORK: THE MACMILLAN COMPANY.

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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—THE MEDIÆVAL DOCTRINES IN THE
WORKS OF DONNE AND LOCKE.

BY FRANÇOIS PICAUVET,

Director of the History of Doctrines and Dogma at the Ecole des Hautes Etudes, Lecturer in General and Comparative History of Mediæval Philosophy at the Faculty of Letters of the University of Paris.

I.

It has seemed to me interesting to call the attention of readers of MIND to some recent works which have resulted from the classes and lectures of the Ecole Pratique des Hautes Etudes, Section des Sciences Religieuses, and the Faculty of Letters of the University of Paris.

For more than twenty-five years the Professor and students have united in undertaking firstly, the historical and impartial study of the mediæval philosophies; secondly, an examination of the sources of antiquity upon which the thinkers of the Middle Ages drew; and thirdly, the study of those philosophers and theologians who, from the XVII. century onwards, preserved or restored the doctrines of the Middle Ages.

From this last point of view attention has been directed to the men who continued to call themselves Scotists, Thomists, Lullists, Scholastics, preserving, with as much exactitude as possible, the doctrines of their predecessors. But most of all the object aimed at has been an examination of the philosophical or theological writers who are regarded as the masters of modern thought. If it is unquestionable that they

appealed to reason and science, that they paved the way for the advent of an essentially scientific philosophy, it appears not less incontestable that there has been continuity and not cleavage, evolution and not revolution, in the march of philosophical thought from the XVI. century to our own days.¹

A number of works have been devoted to throwing light upon the restoration of Thomism in the XIX. century,² and the influence exercised by Roger Bacon from the XIII. century onwards, on exegetists and theologians, scholars and philosophers.³

Next it has been shown that Luther, who wished to break with the philosophy and theology built up around the Holy Scriptures by means of borrowings from the thought of the ancients, was only able to do so by having recourse to another philosophy, the Plotinian, which he found in the works of St. Augustine and Pseudo-Dionysius the Areopagite, by way of Eckhart, Tauler and the *Deutsche Theologie* which he edited twice.⁴

¹The *Annuaire de l'Ecole Pratique des Hautes Etudes, section des Sciences religieuses*, published every year by the Imprimerie Nationale, Paris, gives the programme and summary of the lectures. See also François Picavet, *Essais sur l'Histoire Générale et Comparée des Théologies et des Philosophies Médiévales*, Paris, Alcan, 1913, 1 vol. in 8vo, viii-413 pp., especially the first two chapters.

²The question studied in the *Classes (Annuaire des Hautes Etudes, and Essais, chaps. i. and ii.)* has been treated in articles in the *Revue Philosophique*, 1892, 1895, 1896, 1902, 1908 and 1909; in the *Esquisse d'une Histoire Générale et Comparée des Philosophies Médiévales*, 2nd edition, 1 vol., 8vo, xxxiv-336 pp., Paris, Alcan, 1907 (chap. ix., "La Restauration thomiste au xix^e siècle," pp. 216-288); in the *Essais*, chap. xviii. ("Thomisme et Modernisme dans le monde Catholique," pp. 346-368).

³With regard to the *Classes of the Hautes Etudes* and the instruction at the Faculty of Letters, see the *Annuaire*s and *Essais*, chaps. i. and ii. For works see *Essais*, chap. x., "Editions faites et à faire de Roger Bacon"; chap. xi., "Le Maître des Expériences, Roger de Maricourt," "L'Exégète et le théologien vautés par Roger Bacon"; chap. xii., "Jean disciple de Roger Bacon"; chap. xiii., "Quelques-uns de ceux qui combattent Roger Bacon," "Alexandre de Halès," "Albert le Grand," "S. Thomas"; chap. xiv., "Deux directions de la théologie et de l'exégèse catholique au xiii^e siècle," "St. Thomas d'Aquin et Roger Bacon". See also *Revue des Deux Mondes*, June 1, 1914, François Picavet, "Roger Bacon, La Formation Intellectuelle d'un homme de génie au xiii^e siècle," pp. 642-674, and François Picavet (in *Roger Bacon Essays, collected and edited by A. G. Little*, Oxford, 1914), "La Place de Roger Bacon parmi les philosophes du xiii^e siècle," pp. 55-88.

⁴See François Picavet, *Essais*, chap. iv., "Classification des Mystiques," pp. 95-115; chap. xv., "Une des Origines de la Réforme Luthérienne," pp. 295-309; Maria Windstosser, "Etude sur la Théologie Germanique suivie d'une traduction française faite sur les éditions originales de 1516 et de 1518," Paris, Alcan (thesis for the degree of doctor of the University of Paris).

Descartes has been studied in the Classes and in a number of memoirs or theses not yet printed. It has been shown that Descartes continues, against the adversaries of the immortality of the soul and the existence of God, the struggle urged by the Council of Latran against the Latin Averroistic philosophers; that his doctrine relative to God recalls that of St. Anselm, of St. Augustine and of Plotinus; that the *cogito ergo sum*, the doctrine of extension and many others which originate in his system of philosophy have antecedents in the Middle Ages; that his natural religion, stripped of its theological part, is that of Voltaire, Rousseau, and the XVIII. century.¹

By the comparison of texts relative to the Latin Averroists of the XIII. and of the XVI. centuries, of the "free thinkers" attacked by Calvin and Garasse, with the "esprits forts" of whom Bossuet and La Bruyère speak, and the little philosophers to whom Berkeley devoted his *Alciphron*, the doctrinal bond which exists between the heterodox thinkers of the XIV. century attacked by St. Thomas Aquinas, those of the XVI. century condemned by the Council of Latran, and those of the XVII. century and of the XVIII. who changed their name but hardly modified the original thought, was definitely proved.

Further, it was seen that Berkeley is the continuator of St. Thomas Aquinas and Descartes, finding in immaterialism a proof of the existence of God which recalls St. Francis of Assisi and Raymund of Sebunda.²

Further, Bossuet's *Discours sur l'Histoire Universelle* was studied in relation to St. Augustine in a memoir by Mr. George Hardy, published in the *Bibliothèque de l'Ecole des Hautes Etudes*, while his treatise on *La Connaissance de Dieu et de Soi-Même* was studied in relation to St. Thomas

¹ See *Annales des Hautes Etudes*, 1889-1913; *Essais*, chaps. i. and ii., chap. xviii., pp. 328-345, "Descartes et les Philosophies Médiévales": The supreme aim for him is to adjoin to a theology and philosophy the broad lines of which are already defined, new acquisitions of knowledge ceaselessly augmented by means of observation, experiment and calculation. . . . It was not to make a revolution and to break completely with the past, it was to produce an "evolution which should mean for humanity, without entailing any loss whatsoever, the acquisition of new domains wherein progress seemed to him endlessly possible".

² See *Annales des Hautes Etudes*, *Essais*, chaps. i. and ii., chap. xvi., "Averroistes, Libertius, esprits forts, petits philosophes du xiii^e au xviii^e siècles," pp. 310-327. See also *Esquisse*, chap. viii., "La raison et la science dans les philosophies médiévales," pp. 195-202, and "l'Averroïsme et les Averroistes du xiii^e siècle" (memoir presented at the Congress of the History of Religion in 1900, "Revue de l'Histoire des Religions," 1902).

Aquinas, St. Augustine and Plotinus, in the courses of the school. The Jansenists of the XVII. century and Port Royal were compared with Gottschalk and his contemporaries in the IX. century; and Thomassin and Malebranche, and thereafter Marsilio Ficino were treated along with Plotinus. In dealing with the *Tractatus Theologico-Politicus*, Spinoza's conception of the Old and New Testaments was examined and compared with that of Christians and Jews from the XII. century to the XVII.; and it was noted well that his exegesis, anterior in the *Tractatus* to the *Histoire Critique du Vieux Testament* of Richard Simon, makes use of rules which have been followed by modern writers. A memoir of considerable size was composed on the general relations of reason and revealed religion in the works of Leibnitz, and another on the mediæval doctrines to be found in the *Nouveaux Essais*. Finally it has been shown very definitely, after Sainte Beuve, who in excellent fashion called attention to the fact, that Jean Jacques Rousseau reproduced, in his famous thesis in *Emile*, the advice given by Phavorinus of Arles to a mother for nursing her child, and that Rousseau transformed, not always happily, the ideas of this Gallic author of the II. Christian century.¹

II.

In the Classes of 1913-14, an examination was undertaken of Locke's *Essays on the Human Understanding*, and it was clearly shown that his metaphysics and theology, essentially Christian, are original in this sense that he mingles mediæval doctrines with doctrines which he was amongst the first to expound. It was further noted that the *Nouveaux Essais* in which Leibnitz aimed at expounding and combating the theory of Locke, leaving out, as they do, all that most interesting part of his philosophy, give an incomplete and incorrect idea of Locke to those who have not studied the *Essays* themselves.

In a thesis for the Degree of Doctor of the University of Paris, M. Krakowski, who had attended our lectures and classes since 1911 and who, in a *Mémoire d'Etudes Univer-*

¹ See *Annuaire* and *Essais*, pp. 14, 29, 39, 51, 52 (Pascal made use, after St. Thomas and Raymond Lullus, of the *Pugio Fidei* of Raymond Martin), 56 (the New Academy from St. Augustine to the Abbé Foucher), 65 (l'Education à travers les âges); pp. 166-176 (chap. vii., Phavorinus d'Arles prédécesseur de J. J. Rousseau); and finally the *Revue Internationale de l'Enseignement*, 15th December, 1905, "Essai sur l'Education littéraire, philosophique et politique de Gambetta" (he studied Joseph de Maistre, Bossuet, St. Thomas Aquinas and the Thomists).

sitaires had made a study of Roger Bacon as precursor of Descartes and of Condorcet as regards the doctrines relative to the prolongation of human life, set himself the task of discovering the mediæval sources of the philosophy of Locke.¹ He made a careful study of the text; he consulted those historians who expounded or examined Locke's doctrines; he learnt to compare Locke's doctrines with the philosophy of the great thinkers of the Middle Ages, from Plotinus and St. Augustine to St. Anselm, Albertus Magnus and St. Thomas Aquinas. His thesis begins with an analysis of the works of Locke considered in chronological order. Next the author calls attention to what Locke owes, by the education he received in his family circle, at Westminster and at Oxford, to the philosophers and theologians of the Middle Ages. Then follows a discussion of the sources, classical and mediæval which are closely allied, of Locke's sensationalist theory, and an examination of what his doctrine of primary and secondary qualities owes to his predecessors. The author calls attention to the influence of William of Occam and the Nominalists on the solution given by Locke of the problem of general ideas. As regards the metaphysical and theological part of Locke's philosophy, M. Krakowski begins with the *Reasonableness of Christianity*, showing its relation to certain mediæval doctrines; he gives a brief statement of the theological doctrines, what the idea of God implies for Locke, how he establishes the existence of the Deity and how he determines His attributes, seeking enlightenment in the works of all who, from Plotinus to Marsilio Ficino in the West, have endeavoured to solve these questions essentially mediæval in origin. Finally he lays stress on the angelology of Locke, which he compares with that of his predecessors, beginning with Pseudo-Dionysius the Areopagite, and he explains how Locke, following Plotinus, and before Bonnet of Geneva, makes use of the analogical or comparative method in order to build up the ladder of beings in the intelligible world as in the sensible.

If then Locke is original in his study of the Sciences, in his knowledge of contemporary researches in positive science, and in giving a synthesis of present and past, he nevertheless sought inspiration in his predecessors of the Middle Ages, he acknowledged it and thus preserved a large part of their metaphysical and moral doctrines.

M. Krakowski might perhaps have quoted more frequently

¹ Edouard Krakowski, *Les Sources Médiévales de la Philosophie de Locke*, 1 vol. in 8vo, 216 pp. Paris, Jouve et Cie., 1915.

the text of Locke's writings, in defence of the conclusions he draws, instead of contenting himself with referring his readers to the works. These references are however sufficient. There are, perhaps, certain gaps, certain problems which are insufficiently studied. But it remains incontestable that Locke, over and above his Christian beliefs, has a system of metaphysics and a theology which have their roots in the Middle Ages.¹

John Donne, who died in 1631, when Descartes was preparing his *Traité du Monde*, was a poet and the master of poets; but at the same time he must be remembered as a theologian and preacher. By the education he received no less than by that which he gave himself, he belongs to that generation which, in considerable part, endeavoured to maintain in honour the doctrines of the school of Plotinus which Marsilio Ficino, Pico della Mirandola and many others expounded and recommended to the erudite and the thoughtful at the time of the third Renaissance. But the obscurity of Donne as poet is notable. The edition of his poems by Prof. H. J. C. Grierson, formerly of Aberdeen, now of Edinburgh University, with copious notes which we read while still in proof, has elucidated the text but has further shown the necessity of studying the theologian and preacher in order to understand the poet. This work has been undertaken by Miss Ramsay on the advice of Prof. Grierson, and this was the task she set before herself in coming to study under my guidance at the University of Paris, as Research Scholar and later Fellow, of the Carnegie Trust for the Universities of Scotland. This study has been completed after nearly five years of conscientious, intelligent and sustained work.² She has carefully studied the text of all

¹ I venture to refer the reader to *Esquisse*, chap. ii., "La Civilisation médiévale" (chronological limits, theological and philosophico-scientific character).

² M. P. Ramsay, *Les Doctrines Médiévales chez John Donne, le poète Métaphysicien d'Angleterre, 1573-1631*, thèse pour le doctorat d'Université présentée à la Faculté des Lettres de l'Université de Paris, 1 vol. 8vo, xi-338 pages. Oxford University Press, 1916. The divisions are as follows: Avant-Propos, Bibliographie, vii-xi. I^e Partie. Introduction, 1-33 (Donne founder of the Metaphysical School). II^e Partie. 34-125. Chap. i., "La Famille de Donne, Son Enfance et Son Adolescence, Ses premiers essais littéraires". Chaps. ii. and iii., "Années de Travail littéraire". Chap. iv., "Dernières Années". III^e Partie. Chap. i., "De l'Univers ou de l'Être". Chap. ii., "De Dieu". Chap. iii., "Des Anges ou substances séparées". Chap. iv., "De l'homme". Chap. v., "De l'Union avec Dieu ou de l'Extase". Chap. vi., "Des Sciences". IV^e Partie. Conclusion, pp. 281-294. Appendices. Lists of authors mentioned in the various prose works.

Donne's works—many of which it is difficult to procure—and she has translated into French the most obscure passages, a work which shows how almost insurmountable the difficulties were at times. Her endeavour has been to discover the exact thought of this preacher and theologian in his function as poet, and she has sought to throw light on his thought by a comparison with that of his contemporaries and predecessors. Thus she has established the fact, not only that Donne followed, as did the Anglican Church in her *Via Media*, a path midway between Catholicism and the Calvinistic or Lutheran reform which endeavoured (without success be it said) to hold by the Holy Scriptures alone, but also that he stands, in metaphysics and in theology, much nearer those Catholic thinkers who followed Plotinus by way of Marsilio Ficino not less than St. Augustine and St. Thomas Aquinas.

The plan of the thesis is well conceived. Miss Ramsay has first dealt with the life and intellectual formation of Donne, recalling the character of his family (of which Sir Thomas More was a member, as well as various Jesuits who had a rôle to play in England) and the nature of his childhood and youth, his years of literary activity and his last years.

Miss Ramsay, in this second part of her book, has carefully collected all that can show us how Donne acquired those doctrines which he develops in his poetical and theological works.

In the third part she deals with the doctrines of Donne regarding the Universe or Being, God, the Angels on separate substances, Man, the union of the soul with God, and the Sciences. This is the most important part of Miss Ramsay's work, the part in which she shows very clearly that Donne remains closely attached to the great doctrines of the Middle Ages regarding God, immortality, and the aim to be pursued by man, which is to unite himself to God or the Absolute Perfection. Noteworthy are the pages dealing with the Schools, the Creation, especially the *ex nihilo* theory, evil and sin, miracles, our knowledge of God in this life, God the Creator, Redeemer and Consoler, the relations of angels with men, the origin of the soul, the part played by the body, death which is but a temporal separation of body and soul, ecstasy and the mystics, especially the Spaniards Ignatius de Loyola, St. Philip Neri, St. Teresa, the mediæval attitude of Donne with regard to Science, etc., etc.

Donne, writes Miss Ramsay, in her conclusion, cannot pretend to originality as metaphysician and as theologian.

It is as moralist, as mystic and as poet, that his individuality reveals itself. He may thus be considered as an interpreter of his epoch. As a poet of real genius he is greater than his time; as priest he spoke a language and expressed a thought which must be understood by his contemporaries. And that thought is above all mediæval and Plotinian.

III.

Thus Locke brought about an evolution in English thought, he did not break its continuity.¹ Donne transmitted the philosophy and theology of the Middle Ages to his followers. The Cambridge Platonists or more accurately Plotinists, Cudworth whose work was studied after his death by those who like Locke were in close relations with his daughter Lady Masham,² lead on to Berkeley and his immaterialism so strongly tinged with Plotinism. If it is remembered further that men of science like Newton in nowise abandon the Christian beliefs or the philosophy and theology of the Middle Ages considered in their essential affirmations, one realises that Great Britain has preserved while it increased the moral patrimony transmitted to Christendom by the Græco-Latin world. And like France, in spite of apparent transformations, she has carefully striven that nothing should be lost of what she inherited from antiquity. These two peoples thus find themselves equally in possession of those principles which protect right, justice, Treaties and Conventions. It is not to be wondered at that in the tragic and terrible circumstances in which Britain and France found themselves in 1914, we should have formed the same judgment and taken the same resolutions which translated themselves in united action.

¹ Certain pages which Miss Ramsay devotes to Locke are noteworthy.

² M. Krakowski is right in recalling the *Discourse on Divine Love* translated by Coste, Amsterdam, 1705, in 12.

II.—SOCRATES AND PLATO.

BY J. A. STEWART.

IN the following observations I am making a belated attempt to meet an invitation which the Editor addressed to me long ago—that I would write an article founded on Prof. Burnet's *Thales to Plato*.

At this time of stress, writing for a Philosophical Review is difficult, and readers are likely to be easily bored with what is written. I am therefore confining my observations to one part of Prof. Burnet's book. They are concerned only with the latter part of the book which deals with Socrates and Plato, and are written, I ought to say at once, in order to raise a strictly practical question—How is Platonism likely to be affected in the near future, especially through the influence of his junior readers, by Prof. Burnet's treatment of 'The Doctrine of Plato' in this book?

Let me explain what I mean by 'Platonism':—

'The Doctrine of Plato,' expressing the comprehensive genius of the man, is, in part, a contribution to science and to scientific method, in part, a prophetic message. The name 'Platonism' I would reserve for the faith out of which 'The Doctrine of Plato,' as prophetic message, itself issued and to which it appeals. This faith is properly enough called 'Platonism' after its greatest exponent; but it has had in the past, and will, doubtless, have in the future, many great exponents—poets, saints, theologians, philosophers, even men of action—who never heard of Plato.

The faith out of which 'The Doctrine of Plato,' as prophetic message, issued, and to which it appeals, is a perennial source from which refreshment has been derived throughout the centuries, most abundantly at times of Crisis. And it has always been through channels opened by new interpretation that the refreshment has been derived; for it is just in timely new interpretation that the message of prophecy lives. Does Prof. Burnet's book aid the timely new interpretation in which the message of 'Platonism' lives?

This is by far the most important question that can be asked about Prof. Burnet's book in the estimation of those

who hold that the faith out of which Plato's message issued, and to which it appeals, is an essential element in the well-being of man, and now, at this time of Crisis, look to timely new interpretation of that message for aid in the work of religious and moral reconstruction which, they know, lies before the men of the New Age. And they know that, among the influences which keep this faith alive in timely new interpretation, there is no more important influence than that which comes, now and then, from some great scholar whose study, aiding and aided by his natural sympathy, has brought him, and, with him, his readers—more especially his young readers—into living touch with the personality of Plato or of some other great exponent of the platonist faith. It is always by entering into the mind of the Founder or Prophet of a Way of Life that his followers learn his message and are enabled to find for it the timely new interpretation without which it is a dead tradition. Among the young readers of Prof. Burnet's book are some, we may assume, who are destined to become influential expositors of 'The Doctrine of Plato' for the English-speaking World in the New Age which the Great War has inaugurated. Does Prof. Burnet's book bring these young readers into the presence of Plato himself by exhibiting his Doctrine as that into which he, being a Man of Genius, has put the whole of himself?

I.

Let me recall, with the help of some notes taken at the time, what I thought after finishing my first reading of Prof. Burnet's book: "Here," I said to myself, "is a book about Plato which places him in his environment, social, literary, philosophical, as no book has ever placed him before, and, in so doing, incidentally makes obsolete a good deal of what has been written about him, in this country and abroad, by the most eminent hands. And yet the very thoroughness with which Prof. Burnet fills in 'environment' round Plato makes me feel anxious for the young reader. Plato is one of those men of creative genius, who make their environment rather than are made by it: Does Prof. Burnet, in filling in environment, take sufficient account of the creative genius of Plato? Will young readers see Plato himself behind the dazzle of the innumerable separate influences which rain in upon him from the environment and are reflected back from his surface, as from a mirror, into their eyes as they read Prof. Burnet's pages? My fear is that they will find it difficult to see a definite personality acting singly from within,

easy to acquiesce in an indefinite 'some one' influenced by circumstances from without. Of course the more active-minded among them will be unwilling to acquiesce in such a 'some one'. They will not be satisfied until they have discovered, or think that they have discovered, an operative personality at the centre of the environment supplied by Prof. Burnet's learning. Will they find in Prof. Burnet's learning a guide to the discovery of an operative personality? It seems to me that Prof. Burnet's treatment of the environmental factor is so elaborate, and his treatment of the organic factor so slight, that his active-minded junior readers may (I do not say, will) be led, by the disparity of treatment, into misadventure. It would, indeed, be a serious misadventure if the very circumstantiality of the environment supplied by Prof. Burnet's learning were to invest with a reflected verisimilitude, in the eyes of young readers, some figure environed, some figure of 'the only Plato logically possible in the environment described by Prof. Burnet,' who was, after all, a Plato constructed unwittingly by these young readers themselves out of that environment—a mere double of that environment, that environment personified, that environment 'writ small'.

"The danger, in fact, which I fear for young readers of Prof. Burnet's book is that of failing to see that, great as the book undoubtedly is, it is—so far as it is concerned with Plato—what I would call a half-book. It is a great book of *ιστορία* which waits for its philosophical complement in some great book of *ποίησις*, or, failing that, its psychological complement in some book which shall make a serious attempt to bring modern methods of observation and interpretation to bear upon the mind of Plato as revealed in his writings. For the philosophic touch of *ποίησις* Prof. Burnet's *ιστορία* may have long to wait: indeed, may never receive it; for the time is perhaps past for the creation of a great Portrait of Plato in which some philosophic artist's shaping Spirit of Imagination should represent the Master as himself interpreting his own Doctrine afresh to the men of a new Renaissance and as throwing the weight of his personality into the task of bringing that Doctrine, freshly interpreted, home to their understandings and hearts as a rule of life: the time for this is perhaps past: at any rate, such *ποίησις* can come only *θεία μοίρα*, if it come at all. On the other hand, the control of Prof. Burnet's *ιστορία* by psychological examination of Plato's mind conducted according to modern methods is already practicable. I feel sure that, in the absence of some great Portrait of Plato, as ideal as the shaping Spirit of Imagination

tion could make it, it is mainly to such psychological examination that one must look for the means of forming, what one misses in Prof. Burnet's book, an adequate conception of Plato himself as a personality operative at the centre of the environment so fully supplied by the book."

This, in substance, is what I thought when I finished my first reading of Prof. Burnet's book.

II.

My subsequent readings confirmed the impression left by my first reading. I now felt sure that the more active-minded of Prof. Burnet's junior readers would be obliged, by the very circumstantiality of the environment supplied, to construct, each one for himself, a Plato out of that environment, that is, to infer a Plato from it—the only Plato logically possible, given that environment: and this would be, of course, an abstract, an impersonal, Plato. I felt sure also that the best of them would be disappointed with such a Plato. "This is not the sort of Plato," they would say to themselves, "one expected the author of the *Phaedo* to be." Then, pursuing my diagnosis of the junior reader's mind, I figured him as comforting himself for his disillusionment with the reflection "that, after all, the old view which held Plato to be no mere *partus temporis*, but one of the great original thinkers of the world, was 'subjective,' and that it is satisfactory to have, at last, reached a view, however disappointing, the 'objective' character of which is guaranteed by literary and historical research".

III.

There is no opposition in the whole repertoire of philosophical technique more misleading than that between 'subjective' and 'objective,' because it so often involves the ascription of independent existence to each one of two sets of conditions separately which exist, that is are operative conditions, only in conjunction. The junior reader assumes that his view of Plato's personality is 'objective' because the account of external influences—of impressions received by that personality, is as 'objective,' as true to ascertained fact, as the most up-to-date *ιστορία* of the expert can make it. But it is really a 'subjective' view because it leaves out something essential. It does not take the external influences in conjunction with the mind which receives them and asserts itself among them and over them. The junior reader must be cautioned that it will not do to figure Plato as a *tabula*

rasa. In order to obtain an 'objective' view of Plato's personality one must have the history of his life and time controlled by a psychological diagnosis of his mind. And the more fully and circumstantially the history is set forth, the more necessary is the psychological control, if a 'subjective' presentation of Plato is to be avoided—as 'subjective' as, on the other hand, a psychological diagnosis would be which was not controlled by a history of the life and time of the subject of the diagnosis.

The evidence on which the psychological diagnosis of Plato's mind must rely is, of course, that furnished by his writings, taken not piecemeal, but as a single whole, the life's work of this man of genius.

Here some one will say: "Surely the junior reader must have had this evidence laid before him in Prof. Burnet's book. The Editor of the great Oxford Text of Plato has a more extensive and minute knowledge of what Plato actually says than perhaps any other living scholar. The evidence for Plato's genius to be derived from his writings can hardly be left out in Prof. Burnet's book. The junior reader is without excuse if he fails, as he reads, to see how the account given of the environment is controlled by a psychological diagnosis of the mind environed."

I kept the likelihood of this very natural rejoinder being made constantly in sight during my later re-readings of Prof. Burnet's book, and have now to say: No one could be more heartily ready than I am to admit that there is perhaps no living scholar who has a more extensive and minute knowledge of what Plato actually says than Prof. Burnet has: but, when I look in his book for production of the evidence to be derived from Plato's writings for a psychological diagnosis of Plato's mind, I find that I have to read between the lines of the book in a way which, I fear, one cannot expect the junior reader to do: Prof. Burnet dwells on the circumstances of Plato's life and time, but on the evidence in Plato's writings for a psychological diagnosis of Plato's mind he does not dwell. Indeed, I think I may go so far as to say that Prof. Burnet does not read Plato's writings with a mind alert to points which spring into the eyes of one whose interest and training have made him familiar with the means which recent psychological investigation has placed at our disposal for diagnosis of a writer's mental characteristics based on evidence furnished by his writings. I need not say that I mean no disparagement of a great Hellenist—great both in the field of textual criticism and in that of the History of Ancient Philosophy. I mean no more than I say—that Prof.

Burnet's interest does not lie in psychology. His book, so far as it is concerned with Plato, is therefore, as I have described it, a great half-book.

I do not think that the time is far distant when the psychological diagnosis of the mental characteristics of their authors will be regarded as indispensable to the study of all the philosophical systems which stand out as landmarks in the history of thought. A complete diagnosis of the mind of Leibniz, for instance—a philosopher closely akin to Plato—will, I venture to predict, when undertaken by a competent psychologist (who must also be a competent philosopher) throw a flood of light on the Leibnizian philosophy, and renew its influence. Its influence is bound to be blocked so long as students acquiesce in such exposition and criticism as we have in Mr. Bertrand Russell's *Critical Exposition of the Philosophy of Leibniz*, where no attempt is made to view the Leibnizian philosophy from within, in connexion with the mental characteristics of its creator. I would add that I think that the psychology employed in the diagnosis of the minds of the great philosophers will not have any kinship with the 'rational psychology' familiar to us, under various disguises, in even recent German works. It will be a specialised form of that psychology founded on minute observation of individual cases and comparison of results—one might almost call it that 'clinical psychology'—in which the French have, during the last decade and a half, done such distinguished work, and for which English-speaking psychologists also have shown a special talent.

IV.

Let me now put down a few notes calling attention to certain points which I think the junior reader of Prof. Burnet's book, when he is some years older, will find to have been cleared up by the psychological diagnosis of Plato's mind to which I look forward.

1. I think that the meaning of saying, as we all do, Prof. Burnet included, that Plato was a great dramatist will be better understood. It will be understood that it is eminently as a *philosophical thinker* that Plato is a dramatist—that his philosophical thought naturally takes dramatic form, and that, just where it is most philosophical, it invests that form with the greatest charm, or, it may be, splendour. It will be understood that, when Plato thinks at his best, his thought finds immediate expression in speech which his mind's ear hears, and in faces and gestures which his mind's eye sees, of *dramatis personæ*, the creations of his own shaping spirit

of philosophic Imagination. It will be understood, therefore, that it is 'Socrates,' not Socrates, who speaks even in the earliest Dialogues: that, when Plato wrote even his earliest Dialogues, he had already begun his life's work, as a philosopher, in all seriousness, and was not keeping his philosophy *in petto*, till, at the age of 40, he should found the Academy and begin to give lectures. To suppose that these early Dialogues and the monumental Dialogues of Plato's prime which followed them up to the foundation of the Academy are merely dramatic sketches written with the object of putting on record the opinions and difficulties of Socrates and other people of a bygone generation, not Plato's own opinions and difficulties at all, is really to make it impossible to conceive how he was able, at the age of 40, to burst out as a philosopher in his Academy lectures and so-called Academy Dialogues. Unless I am much mistaken the verdict of psychology will be that Plato, judged on the evidence of his writings taken as an organic whole, was one of those keen spirits—some of whom are ruled by Imagination, some by scientific interest, some, as he was, by both—who begin their life's work—and sometimes even complete it—in early youth. One has only to run the mind's eye down the lists of great poets and great philosophers to find many instances. To suppose that Plato kept himself deliberately out of the pre-Academy Dialogues is, surely, to suppose the psychologically impossible.

2. The researches of Prof. Burnet and Prof. A. E. Taylor have vastly enriched our knowledge of the historical Socrates. But the junior reader, while duly grateful for this, must take care that he does not let it obscure and confuse his conception of Plato. Here is an extraordinarily convincing presentation purporting to be that of the historical Socrates, and, doubtless, resembling him pretty closely. The data for this presentation have been collected from various sources, especially from Plato's Dialogues. But although many of the data for a very convincing presentation of the historical Socrates come from Plato's Dialogues, it by no means follows from this that Plato's sole, or even main, object in writing these Dialogues was to perform the pious duty of a Boswell, and present the historical Socrates in a life-like picture for the information of posterity. If the *dramatis personæ* in the Dialogues are good likenesses of Socrates and other people who had been well known to Plato and to his readers, this is not because Plato's object in writing was to make good likenesses of Socrates and these other people, but because images rose up spontaneously

before his mind in the likeness of originals, and were transformed by the genius of the great philosophic dramatist into *personæ*—actors of his own thought. The so-called Socratic Dialogues of Plato are not otiose impressions retained from the past, but present activities of Plato's spirit as it grapples with problems which 'have no date'. Plato, the philosopher, is already thinking hard, in the earliest of them, in the dramatic manner characteristic of his genius. We owe our knowledge of Socrates principally to Plato, and our knowledge of Plato largely to his presentation of Socrates. Where Socrates is not effectively present in a Platonic Dialogue we miss what is most characteristic of Plato. Those Dialogues in which Socrates is most effectively present are 'Platonic' in a much truer sense than they are 'Socratic'. It is not 'good psychology' to look for 'Platonic Doctrine' as a residual element to be found after 'Socrates' has been eliminated. The foundation of the Academy was certainly an important event in the life of Plato; and after it his manner, as a writer of Dialogues, became more and more that of the lecturer. But to identify the real Plato with the lecturer would be to go far wide of the truth. It would be nearer the truth to maintain that the real Plato was the young man who was present at the trial of Socrates: nearest the truth, to equate the real Plato with the Doctrine of all the Dialogues from the *Euthyphron* to the *Laws*.

3. The gist of the foregoing note is that the success which has crowned the research of Prof. Burnet and others who have taken in hand the work of reconstructing the 'historical Socrates' is likely to mislead the junior student by disposing him to believe that there were two successive Platos—one, the author of dramatic sketches written merely to give faithful pictures of the historical Socrates and his companions—dramatic sketches out of which the writer carefully kept his own opinions; the other Plato, essentially a Lecturer, the Head of the Academy who began to express, perhaps to form, his own opinions for the first time at the age of 40.

This notion of two successive Platos, result of the prominence lately assumed by 'the historical Socrates,' I look to psychological diagnosis of Plato's mind eventually to remove. But in the meantime it is bound to have the effect of blocking the growth of any young student of 'Plato's Doctrine' who may have been induced to harbour it, by obliging him to put aside as 'Socratic' and not 'Platonic' the two things which, we may assume, impress and attract him most in reading the Dialogues from the

Euthyphron to the *Timæus*—the Doctrine of the Good, and the haunting presence of Mysticism.

4. The Doctrine of the Good, it will be admitted by everybody, is the key-stone of the metaphysical, ethical and political argument built up in the pre-Academy Dialogues—quite as plainly the key-stone in the slight Dialogues of the earliest period as in the elaborate *Republic*. But for the junior reader whose condition I am trying to describe these pre-Academy Dialogues are merely dramatic sketches of Socrates and his friends—people who belonged to a generation past when Plato wrote: in these Dialogues Plato is mainly a reporter: no difficulty, no doctrine, not even the dominant Doctrine of the Good, is felt or thought from within by Plato; he looks at every difficulty and doctrine there with the eye of an outsider. Socrates, we now know, held the doctrines—some of them taken over from predecessors, some of them worked out by himself—which Plato reports in these Dialogues: but in Plato's own philosophy set forth in Academy lectures and Dialogues they do not appear. Here I would ask the junior reader, while he waits for a systematic psychological diagnosis of Plato's mind, to consider, meanwhile, this point about the Doctrine of the Good: whether the doctrine, as it is set forth in the *Euthyphron*, *Charmides*, *Laches*, and other early Dialogues, is a logical venture which subsequent reflexion might put aside as unwarranted—a doctrine which the historical Socrates might well have held, and the Founder of the Academy might as well have dropped, if he ever held it; or whether the doctrine is not rather something organic in the mind of man, being the fundamental principle of an experience which no one who had conceived it so clearly and stated it so well as Plato has done in these early Dialogues could ever cease to make consciously the key-stone of his philosophy. Is it not a matter of fact that the Doctrine of the Good is the key-stone of Plato's philosophy, metaphysical, ethical, political, religious, as that philosophy is set forth in Dialogues written after the foundation of the Academy, although in some of these Dialogues the subjects dealt with do not call for explicit reference to it? It visibly holds together the vast structure of the *Timæus*, and is the latent bond giving unity to the elusive elements of which the *Philebus* is composed. The expression 'Idea of the Good,' indeed, appears only in the pre-Academy *Republic*; but it stands for the conception which not only has already been made prominent in the earliest Dialogues, but is going to be kept prominent in the latest. The Doctrine of the Good was held, we need not

doubt, by the historical Socrates; that, however, does not mean that it was a 'Socratic,' but not a 'Platonic' doctrine: it was held by Plato throughout his whole career in essentially the same sense as by Socrates, although the expression of it may have varied. I am afraid the junior reader will find the opposition between 'Socratic' and 'Platonic' so sharply drawn in Prof. Burnet's book confusing, and not least so where the Doctrine of the Good is concerned. It is true that the Doctrine of Ideal Numbers is 'Platonic,' not 'Socratic,' but it is also true that this Doctrine does not conflict with the Doctrine of the Good, or with the Doctrine of Ideas generally, as set forth in Dialogues written both before and after Plato lectured on the Numbers. The absence of the Doctrine of Ideal Numbers from the Dialogues written after Plato began his Academy Lectures in which this doctrine was set forth—some of these Dialogues being marked by his most sustained philosophical effort—makes one suspect that the doctrine has had undue importance attached to it by recent Plato-Scholars—that it was the result of an excursus from the main path of his philosophy made by Plato in a course of lectures which Aristotle did not like. At any rate, the junior reader must be warned not to think of contrasting the Doctrine of Ideal Numbers as 'Platonic' with the Doctrine of the Good as 'Socratic' in the sense of 'non-Platonic'. Further, I would ask the junior reader to consider whether it is reasonable to dismiss as 'Socratic,' in the sense of 'non-Platonic,' the Doctrine of the Good, as it is set forth in the central books of the *Republic*, while, at the same time, recognising, as one is bound to do, that to know the Good with which this Doctrine is concerned is the *raison d'être* of a curriculum of education, outlined in these central books of the *Republic*, which, as Prof. Burnet tells us, and tells us truly, was afterwards adopted by Plato in his own Academy and so effectively established there that it became the model on which, centuries later, European Universities shaped their scheme of studies.

There is still another point, under this head of the Doctrine of the Good, which I would have the junior reader consider: The Constitution of the State set forth, by the mouth of Socrates, in the *Republic*, embodying, as it does, the Doctrine of the Good, does not reappear in the *Laws* where Socrates is not present: I would ask the junior reader—Is it fair to argue from this that, while the Constitution in the *Laws* represents Plato's own political view, the Constitution in the *Republic* either never represented it, or did not continue to do so? I think that the junior reader, were he

to take due account of the psychologically probable, would find it easier to suppose that Plato changed his political view between the time of writing the *Republic* and the time of writing the *Laws* than that he never held the view represented by the Constitution set forth in the *Republic*; but it is not necessary to suppose that he changed his view. The view represented by the Constitution of the *Laws* does not supersede that represented by the Constitution of the *Republic*; for each of the two Constitutions is intended for an entirely different kind of State—the Constitution of the *Republic*, for the Capital City of a Hellenic Empire, Plato's dream; the Constitution of the *Laws*, for a municipality, not unique, as the Capital City of an Empire is, but, one among other similar municipalities—for some new Colony, in fact, which might possibly apply to the Academy for a draft Constitution.

Let me say, in concluding this section, that, while I think that the junior reader may easily be led by Prof. Burnet's book to regard the Doctrine of the Good set forth in the pre-Academy Dialogues as 'non-Platonic,' I do not think that the experienced reader will take Prof. Burnet to mean all that such a judgment would involve for our estimate of Plato. At the same time I do think that even the experienced reader will be troubled by the strain which Prof. Burnet puts upon him of always having to remember that a personage who has all the marks of a brilliantly imagined dramatic figure is, after all, the 'historical Socrates,' and is misunderstood if regarded as anything else: and troubled also by what seems to be Prof. Burnet's opinion, that the Doctrine of Ideas—the Idea of the Good being, of course, one of the Ideas—as it appears in the *Republic* and other pre-Academy Dialogues, was superseded by the Doctrine of Ideal Numbers, the only 'Platonic' Doctrine of Ideas, it would seem, according to Prof. Burnet. 'The Ideas' were, doubtless, taken by the historical Socrates from predecessors, but he transformed them by giving them a significance for metaphysics and ethics which was lacking to them as conceived by his predecessors; and the transformation wrought by the historical Socrates was immensely augmented by the dramatic Socrates, that is, by the genius of Plato. 'The Doctrine of Ideas,' as we have it in Dialogues written before Plato began to lecture on 'The Numbers,' was already as truly a 'Platonic' Doctrine, as the Pediment Groups of the Parthenon are 'Phidgian,' although the archæologist can trace their genealogy back, through gradual steps, to the rude handiwork of some remote 'Daedalus'. One would like to see in Prof. Burnet's

treatment of 'The Doctrine of Ideas' a better recognition of the marvellous transforming power of the *τελευταία διαφορά* which Genius knows how to add to material—often already elaborately formed material—inherited from predecessors.

5. I come now, in the last place, to Prof. Burnet's recognition of the presence of Mysticism in the Dialogues. He recognises it; but it is not a 'Platonic' feature. The mind of Socrates had its mystical side which Plato describes and illustrates. The mysticism which appears in the Dialogues does not come from Plato's mind. This is Prof. Burnet's account of the presence of Mysticism in Plato's Dialogues.

I do not think there is anything in Prof. Burnet's book which points to the need of a comprehensive diagnosis of Plato's mind more clearly than this account of the presence of Mysticism in the Dialogues. Even now, while one waits for the comprehensive diagnosis, one may surely venture to say that the man who found the language, sometimes so subtle, sometimes so impassioned, in which the mysticism of another is depicted in the Dialogues, must have been himself one of the great Mystics. One's admiration of the qualities of Prof. Burnet's book makes one regret all the more that he does not see that Plato is one of the great Mystics. This failure affects especially his view of the Doctrine of Ideas and his view of the place which the Myths hold in Plato's philosophy. I will not enlarge on these topics. I will only say that the Doctrine of Ideas, stripped of its æsthetic and religious significance, and shrunk into a Doctrine of Ideal Numbers, is not the 'Doctrine of Ideas' which made Platonism the power which it has been, and is, in the world: as for the Myths—Prof. Burnet regards them as negligible, being external to Plato's philosophy. They are indeed external, if Plato is not one of the great Mystics. If he is—and his appreciation of the mysticism of Socrates, and the nature of the influence exerted by Platonism continually down to the present time, seem to show that he is—if Plato is one of the great Mystics, his Myths are not external to his philosophy, but are an essential part of it, without which the other parts of it cannot be understood. A great man—be he philosopher, or poet, or sculptor, or statesman, or whatever else—is great just because, having great endowment, he puts the whole of himself into every work which he brings forth. Plato was a man of this sort: and his work is misjudged, its greatness is lost upon us, if we interpret it in terms of a part, not of the whole, of him—in terms of a Plato *minus* the mysticism, the prophetic vision, of the man. I feel sure that a com-

prehensive diagnosis of the mind of Plato will show that the Myths are not external to his philosophy.

Prof. Burnet's book, so far as it is concerned with Plato, is, as I have said, a great book of *ιστορία*—an eminent example of a class of books to which great deference is paid at the present day, and, on the whole, rightly paid—books which take works of the past and their makers, in the fields of religion, philosophy, literature, fine art, strictly as subjects of science, and employ all the resources of historical and philological learning in filling in environment round them. Where the works and their makers, so treated, are mediocre, the game of 'adding to our scientific knowledge,' if cleverly played in relation to them, may be accepted as worth playing for its own sake, that is, for the fun of playing it; but where the works are great masterpieces and their makers men of genius who have put the whole of themselves into their works, the case is far different, for a great danger is involved—the danger of 'subject of science' coming in between us and 'source of inspiration'. If such a disastrous eclipse is to be avoided, where masterpiece and man of genius are concerned, the *ιστορία* which takes them as 'subject of science' must be controlled—the more elaborate the scientific achievement, the more strictly controlled—by a conception of the personality of maker and significance of work—a conception for which, as I have contended in this article, we have to look, in the main, to psychology, without—let me now say with special reference to Plato and his work—without giving up the hope—for this is a time of Crisis when great things may happen—without giving up the hope that the conception may come to us in a more excellent way, flashed into our minds by the Imagination of some great master of the Interpretation in which the message of Platonism lives.

Let me end with an illustration, from the field of Greek sculpture, of the contrast, on which I have dwelt throughout this article, between *ιστορία*—now, I fear, in almost exclusive occupation of that particular field—between, on the one hand, *ιστορία*, concerned scientifically with the antecedents of a masterpiece and the technique employed in its production, and, on the other hand, the Imagination of the great Interpreter which grasps intuitively the significance of the masterpiece as revelation of the genius of the maker:—

In the following sentences *ιστορία* sets forth items of technique in the case of a famous masterpiece of Greek sculpture—"Ein mehr breites als schmales Oval umschreibt

das Gesicht in seinem äusseren Umriss, ohne dass es deshalb in seinen einzelnen Formen breit zu nennen wäre. Denn wenn so manche griechische Köpfe, namentlich aus der peloponnesischen Kunstschule, wie aus einem viereckigen, quadraten Körper herausgeschält erscheinen, so geht hier die Grundauffassung des Künstlers vielmehr von der Rundung des Kopfes aus. Die Seiten fallen nicht von der Vorderfläche des Gesichts wie von einer Ecke steil ab, sondern sie wolben sich von der Basis, von Ohr und Kinnbacken, in schönen Bogen nach vorn, so dass sich namentlich die Mitte der Stirn in starker Schwellung energisch hervorhebt und ebenso die Nase kräftig heraustritt." Contrast with this effort of *ἰστορία* the achievement of *ποίησις* where the Imagination of the Interpreter sets forth the significance—in this case the individual beauty—of the same masterpiece as revelation of the genius of the maker—

And if it be Prometheus stole from heaven
The fire which we endure, it was repaid
By him to whom the energy was given
Which this poetic marble hath array'd
With an eternal glory—which, if made
By human hands, is not of human thought;
And Time himself hath hallow'd it, nor laid
One ringlet in the dust.

III.—RECOLLECTION, ASSOCIATION AND MEMORY.

BY J. LAIRD.

THE problems of memory, always fundamental, have a quite peculiar importance in contemporary philosophy. On the one hand, psychological investigations into the subject have received a welcome and a powerful impetus from M. Bergson's lucid pages. On the other hand, the new realists have quickly discovered that the status of memory, memory-images and association is critical for their important inquiries into theory of knowledge. Memory, therefore, has become the meeting point of two dissimilar lines of research, to the reciprocal benefit of the philosophy and psychology of the day. Its problems, of course, are old problems, and even the crucial distinctions of present discussions have all been anticipated in one way or another. There are, and have been, many philosophers who could claim, not without reason, that the new theories had passed through their minds long before the present fashionable philosophies announced them with trumpets. But that is what Dr. Johnson said of Hume; and this parallel should serve as a warning, even granting that these philosophers, unlike the lexicographer, could produce tangible evidence in favour of their assertion. In any case, it is written in the Koran that every age hath its own revelation. Every age has the duty of making its ideas clear in its own way, of marshalling its evidence and deducing its conclusions.

In the present paper I hope to be able to keep many of M. Bergson's theories in mind, particularly his assumption that duration, in the true and proper sense, is entirely a property of the spirit, and his doctrine that there is a radical difference in kind between the explicit recollection of specific events in the past and that mechanism of reproduction or repetition which we are also accustomed to describe as memory. For the most part, however, I shall follow the trail of the new realists, speaking their language as well as I can, and assuming what I take to be their main assumptions. The aim of

this procedure is not, of course, to show that the facts of memory can be tortured into consistency with these assumptions, but contrariwise that the facts require them. And although this plan of argument is always attended by the dangers which arise from the covert dogmatism of a new terminology, only the result can show whether this danger has become an actual injury. The principal assumptions of this theory are, I think, two in number, and they may conveniently be stated in a negative form. It is held, in the first place, that the existence of apprehension as a fact does not imply any community of properties between the process of apprehending and the object apprehended other than those properties which are shared by all beings; and, in the second place, that there are no limits, *a priori*, to the power of the mind in becoming directly acquainted with objects as they really are in themselves. Such limitations as exist must be shown to exist by wholly empirical arguments. If in some cases representative intermediaries come between the mind and its objects, if, in other cases, only knowledge-about and not direct acquaintance can be obtained, the reason lies in certain circumstances of mere fact, and cannot be deduced from the analysis of knowledge itself. The process of apprehending is not representative at all. When it is successful it simply finds, discovers or inspects the object as it really is.

It will speedily be plain that these assumptions have an important bearing on the problems of memory, and, in particular, that they are intricately connected with the analysis of recollection. The term recollection, like every other used in discussions on this question, is somewhat ambiguous, but an example will explain what is meant by it, and will perhaps give a better explanation than any meticulous inquiry into verbal import would. Consider, for instance, a man's recollection of his wedding day. This event is presumably unique in his life's history, and presumably aroused his interest and attention to such a degree that he is not likely to forget it afterwards. There are several events in the life of every man which require the same analysis as this one. The man can call them to mind at any time in all their specific uniqueness as definite particular events in the past; and the lapse of time has very little effect on the form they assume when they reappear to him. His recollection of them differs, no doubt, from their original presentation in ways which we shall have occasion to notice. But one recollection of an event does not differ appreciably from the next recollection of the same event. This, then, is what is meant by recollection in its most explicit form; and there are various approximations to it which ought to be described by the same name.

The natural interpretation of facts of this kind is that the man, spontaneously or voluntarily, apprehends the same past event again and again, and knows that he does so. His object seems to be the very event which he formerly apprehended as a present reality; recollection means his recurrence to it; and if the event itself appears to be poorer and feebler when recalled than on its original occurrence the obvious explanation seems to be that lapse of time makes the man's grip of it less secure. This is the natural interpretation, and it is also the naïve interpretation of the plain man, as anyone may discover by making inquiry among those of his friends who are unacquainted with technical psychology or philosophy, and refraining from giving them leading questions or suggestions. Under these circumstances it is the philosopher's business to ask whether there are any good grounds for denying that this natural interpretation is the true one. If not, the presumption is in its favour, and perhaps more than the presumption.

The new realists maintain, not merely that there are no serious difficulties in the way of this analysis, but that the analysis is the only one which they find to be in accordance with their own experience; indeed that there are insuperable objections to any other. The first part of this thesis follows naturally from their theory of knowledge. If a process of apprehension must have many elements literally identical with those of its object, and particularly if the distinction between process and object is only one of 'aspect,' it is clear that a process which is wholly in the present and an event which is wholly in the past can scarcely be united in a single pulse of experience, and clearer still that this union could not occur repeatedly in connexion with the same past event. According to the new realists, however, the facts themselves show that there is no sort of identity between process and object in these cases, at any rate in point of time, and therefore that there is no theoretical difficulty in this respect. The objection, they maintain, has no better warrant than any other vestige of the indefensible theory that knowledge consists merely in the states of a 'wind borne mirroring soul' bereft of any real power of apprehending aught save its own feelings and images. It depends upon the same prejudice as the theory that a temporal process of apprehension cannot apprehend what is not in time, that a particular act cannot comprehend a universal, or even that a mind correlated with a tiny area in the brain cannot, in Malebranche's phrase,¹ 'take a walk among the stars' or directly perceive an object outside the body. And the other stock objections, in their

¹ *Recherche de la Vérité*, Livre III., II^e Partie, chap. i.

opinion, have an even slighter foundation, if that, indeed, is possible. To Hume's dogmatic assertion that it is 'impossible to recall the past impressions,'¹ they reply that his statement is either false or meaningless unless it is taken in the quite trivial and unexceptionable sense that no one, in the present, can have his original actual experience of the past. Certainly, this past experience can no more be restored than the united efforts of the king's horses and the king's men, in the legend, were able to restore Humpty Dumpty. But that is the sum of this objection. And if there seems to be a difficulty in the fact that knowledge is of that which *is* and that the past *is not* because it is dead, the new realists answer that this further objection evidently depends upon a fallacy of equivocation. Knowledge is of that which *is* when the word 'is' does not imply tense, and on that meaning only. Restriction to the present makes nonsense of the dictum. A piece of past existence is just that piece of past existence for all time. Because it is past it is eternally safe. Even revolving moons and suns cannot affect the full reality of its being. It is precisely that event which formerly happened.

The alternative analysis, which, in some form or other, is the usual one, rests upon a particular interpretation of memory-images. This analysis, in its least qualified form, may be stated somewhat as follows. Recollection is wholly a present event, and proves, on investigation, to consist of the existence of a memory-image contemporaneous with the process of recollecting, together with the present knowledge and belief that the image represents, and adequately represents, the past which has been experienced. The memory-image is said to be a *reproduction* on the ground that it is a later edition, and approximately a *facsimile*, of the former event. But instead of being the past existence literally, it is only a revived copy. Of course, the mere fact that an image now exists which happens to be similar to a previous percept, feeling or image is not in itself recollection at all; for that would ignore the vital feature of recognition proper, which makes recollection what it is. But recognition, according to this theory, seems to be mere knowledge-about. We know *that* the reproduction represents the past, *that* we have experienced the corresponding past event, but we are never directly acquainted with the past event itself. This view, despite occasional ambiguities of expression, is the substance of the celebrated chapter on Memory in James Mill's *Analysis*.² And I think

¹ *Treatise*, Book I., Part III., sec. v.; Selby-Bigge's edition, p. 85.

² *Analysis of the Phenomena of the Human Mind*, chap. x.

it is Dr. Ward's¹ view also. One would conjecture that these authors have very highly developed powers of visual imagery.

In most works on psychology a modified form of the theory prevails, particularly when the writers have clearly realised that imagery of every kind is very feeble in many persons whose powers of perception, introspection and recollection are not a whit inferior to their neighbours'. This modified theory need not deny that past events, in some cases or in all, may be directly apprehended. But it maintains, in the words of William James, that 'the first element which such a knowledge involves would seem to be the revival in the mind of an image or copy of the original'.² And although some of the statements of James himself and of others who argue in the same vein seem to imply, not merely that the past event may *also* be apprehended directly when such a copy occurs, but that it *must* be so apprehended,³ a more careful examination of their language indicates that in their view also the recognition of the past is merely knowledge-about, and derived, in all probability, from a conceptual extension of certain characteristics of the specious present. It may be doubted, therefore, whether the qualified and unqualified forms of this theory differ very much. In any case both of the forms agree that the fundamental fact in recollection (and, more generally, in memory) is the existence of images in the present which are described in somewhat metaphorical language as reproductions, or even as residua, of the past.

The presuppositions of this paper make it unnecessary to consider any defence of this representative theory based on the general characteristics of knowledge. The only relevant arguments within the self-imposed restrictions of this discussion are empirical ones; and the most important of these depend upon the assertions that memory-images, in point of fact, always exist at the time of recollecting, and that they differ intrinsically from the events in the past which they represent. Let us, then, consider these assertions with special reference to those instances of recollection in which the so-called memory-image is unusually clear and precise.

The main question at issue is evidently whether these images are really judged to be contemporaneous with the process of apprehending them. If not, they should not be presumed to exist in the present, and the principle of parsimony, if nothing else, would lead us to expect that they are

¹ Article "Psychology" in *Encyclopædia Britannica*, eleventh edition, vol. xxii., pp. 573 *sqq.*

² *Principles of Psychology*, chap. xvi., vol. i., p. 649.

³ *Ibid.*, especially p. 650.

simply the past events themselves. That they are apprehended in the present is beyond question, but it does not follow on that account that they are present existences. And there are very good grounds for denying that memory-images are judged to be present existences, when once this source of confusion has been dispelled. The plain man, it is true, is apt to be puzzled when he is asked *where* his memory-images exist, and *when* they exist. He has a present awareness of them, and, in a way, they seem to be spread out before him, and not very far distant. But if that were all, there would be very slender reasons for his perplexity; for his present awareness of them is no proof of their present existence, and their apparent proximity in space is irrelevant unless the imaged space in which they appear is judged, *de facto*, to be situated within the perceived or perceptible space in which the man (or his body) is at the time when he is aware of the image. But the plain man does not confuse his images with his percepts, and it would be a very gross confusion indeed if he localised his images within the space which he perceives at the time of imaging. Indeed, if he did so he would suffer from hallucination. Thus the distance of an image is a distance in imaged space; and if a so-called memory-image is really (as seems plainly possible) a former percept now remembered, the natural inference is that its time and place are those of the remembered percept itself. In other words, any one who has an explicit memory-image literally transports himself *in memory* to the time and place of his original experience.

Let us put a case for purposes of illustration. A man who has seen the Victoria Falls during his travels may call up a memory-image of them when he returns to England. On our theory the scene extended before the eye of his mind is the very scene of which he was formerly a spectator, and the spatial characteristics of it are relative to the position of his body as a spectator when he was there. The 'image' in other words is a scene containing his imaged body to precisely the same extent as his original percept contained his perceived body. The scene which is imaged does not really appear to be within the four walls of the English library where the traveller is sitting, and there is no good reason for denying that its place is actually 17° 51' S., 25° 41' E. Similarly the time of it is not the time which the traveller spends in England, but the past time which he spent in Africa.

The obvious reply to this view is that memory-images may be aroused voluntarily in a way that feels similar to the creation of images of the fancy, that 'free' images of the

fancy appear to exist contemporaneously with their creation, and that there is no intrinsic difference between a 'free' image and a memory-image, since these differ only inasmuch as there is an accompanying reference to the past in the latter which is absent from the former. But what does this argument prove? It cannot prove that everything which the mind apprehends voluntarily is judged to be contemporaneous with the apprehension of it; for the mind can voluntarily apprehend universals and know them to be timeless. And surely the admitted difference in reference to the past is vital to the whole problem. Thus it is legitimate to accept the facts as they are stated in this argument and yet to deny the conclusion, unless the whole question is begged by the use of the phrase 'arousal'. But it is also legitimate to point out that the statement of facts on which the argument is based is by no means indisputably accurate. It is really very doubtful whether 'free' images are usually supposed to be present either in space or in time, at any rate in the same sense as percepts. A proof of their presence in space may indeed be drawn from the fact that some persons are sometimes capable of projecting their images upon a perceived surface. But an exceptional power of this kind does not prove a general theory, any more than the ability of some persons to twitch their ears voluntarily proves that there are no involuntary muscles. And this question is not disconnected with the former. Imaging occurs when the mind plays with its ideas, and these ideas are usually old ideas even when they appear to be quite dateless. Their bizarre combinations are due to the omission of their original accompaniments rather than to anything else. They come together in strange conjunctions like flotsam from a wreck or patterns in wind-swept sand. Even dreams, as followers of Freud insist, consist of old materials condensed together in surprising fashion. It is true however that dream-images usually appear to exist when the dreamer notices them, and that his emotions show that the unexpected combination is really a new event in his experience. To deny this would be folly, and it would be ill-advised to lay much emphasis upon the relevant differences between the imagery of dreams and of waking life. So we should not deny that some images are judged to exist contemporaneously with the imaging of them. We should only note the fact that this coincidence is often very doubtful.

The second empirical argument against the analysis of the new realists states that memory images cannot be past events, because they have only the kind of reality which images have, and that is not the reality of actual events in any

sense relevant to this discussion. Now, even if there were always an intrinsic difference between percepts and feelings, on the one hand, and what we call their images on the other, such that percepts and feelings necessarily possess characters which images lack, the possibility would still remain that images were literally the originals bereft of these characters. But, in point of fact, there are no such intrinsic differences. Images differ from their originals in intensity, fullness of detail, steadiness and the like, but this type of difference does not prove that images and their originals are wholly different beings. Some percepts are fainter than some images, and the wavering jets of gas at a country fair to which the unsteadiness of images have been likened are percepts after all. There is no serious difficulty, therefore, in maintaining that any differences which seem to be objective are due to time perspective and to the fact that the mind has a slighter hold of past events than of present ones. The really important difference between, let us say, percepts and images is not objective in this sense. It is a difference in respect of bodily consentience, or of what is really the same thing, the so-called 'aggressiveness' of percepts. The ultimate difference is partly a bodily one, partly one of feeling. A percept is always part of a complex in which the condition of the body judged to be contemporaneous with the mental attention, its motor attitudes, and the feeling tone connected with it, are included. The bodily consentience is quite different when imaging or recollection occur, and the fact has several interesting consequences. We may note, in the first place, that we usually neglect these organic sensations, except when they are very pronounced, in favour of their objective reference; and in the second place, that the present, for us, is usually bodily. In reality the organic sensations may really be past when we think them present, *i.e.*, when we think that they occur at the same time as our present act of attention. Probably indeed, they are past, since a slight interval is required for nervous conduction. But we judge them to be present, and call everything present which is included in the perceived complex of which they are part. Thus it is that we take the star which we see to be present although we may really see it as it was in the days of Moses; and thus it is that we cannot adequately distinguish between introspection and retrospection.

This leads us back to the question of time. We need not stay to consider the difficulty that an event may occupy a few seconds in recollection although it occupied days or years in happening. This is a difference between the apprehension of

the past and that of the present, and in itself it only proves that the former process is the speedier, although the reason is doubtless that most of the detail of the past is always omitted in retrospect. The explanation would be the same in principle even if we suppose the case of one of Swift's Struldbrugs contemplating in a few minutes the whole existence of a tree which he had planted and seen 'standing long an oak, three hundred year'. We may therefore pass to more important questions of time. Recollection, on any theory, has a quite specific reference to the past. In what respects, then, does pastness seem to pertain to its object? The answer to this question, important in itself, is particularly important in the present connexion.

Many psychologists maintain that when we recollect a past event its pastness is never one of its objective characteristics. The reasons they usually allege in favour of this doctrine are that empty time is not an object of intuition, that a lapse of ten years does not differ to mere inspection from one of five years, and that dating in time is as purely conventional as the date of Easter, or the embolismic years in the Jewish civil calendar. These reasons are flimsy. The impossibility of intuiting time in and by itself does not show that there are no objective time relations in time which is filled, or, more accurately, in every single event which can be intuited. The comparison, to inspection, between a lapse of ten years and one of five involves the same kind of difficulty as the comparison, to perception, between a broad landscape and the interior of a room. In one sense the same spatial volume may be said to be perceived because the eyes are fully open. In another way the greater may easily be perceived to contain the less. And although dating in time is usually expressed by reference to arbitrary units and a conventional starting point, it is not therefore a mere fiction. It is evident, indeed, that when we isolate, in recollection, an event which happened ten years ago and another which happened two years ago, no corresponding difference appears. But that is because we have isolated them. And even these isolated events have intrinsic relations of before and after, a beginning and an end, hence supplying a firm basis to conceptual schemes of time. It is beyond question that objective transience is a datum of direct apprehension, and in perceiving transience we perceive before and after.

Accordingly the order of earlier and later is not merely a phenomenon of the spirit. There is nothing subjective in our knowledge that Mr. Asquith resigned before Mr. Lloyd George became Prime Minister, or that the *Comet* was built before

she put to sea. Even the theory that our belief in the transition of *things* is merely correlated with an experienced *mental* transition is, in its own way, a plain denial of subjectivity. For how can mental and non-mental be correlated in this way except in so far as they are judged to occupy the same time? On the other hand, pastness, presentness, and futurity are wholly relative to the spirit, and indeed are purely psychical experiences except in so far as they contain an order of earlier and later. It is legitimate, indeed, to speak, as we have spoken, of a past event when we mean an event known to have occurred earlier than another which, at some particular moment of time, we judge to be contemporaneous with the experience of presentness. But it is plain that there is a specific psychical experience of presentness, pastness, and futurity which is irreducible to the order of earlier and later. These are qualitatively recognisable elements in our references to any objects including ourselves, shifting in their relation to things and to the mind itself in such a way that any event in life after its beginning is (at different times) future, present and past to us. There is no greater mystery in this than in movement or change itself. But the implications are important, especially with reference to the specious present.

The theory of the specious present is based primarily on the fact that an act of attention occupies a sensible duration. The inference is that the facts apprehended in this act of attention must occupy a stretch of time, not merely a mathematical point of time; and although this conclusion does not follow from the premises, since no logical contradiction is implied in supposing that a mental process which endures may refer to a mere position, like an instant, which does not endure, still it seems to be true that any *observed* event has a sensible duration. Then follows the statement that if we concentrate our attention on some actually perceived transition contemporaneous with the attentive act (such as the movements of a Savart's wheel) the perceived transition is correctly estimated within fairly constant limits which are probably coincident with the movement of attention itself. And this seems to be established. Finally the deduction is drawn that any transition apprehended as a whole appears to be present as a whole, in the sense that each part of it appears to be present with or without some mere indication of pastness. And that is a mere fallacy.

In point of fact the total transition apprehended in any single act of attention is a specious past, and probably a specious future, as well as a specious present. In our awareness of our own mental transitions the presentness

does not rest in the felt transition but moves with it so that part of the transition apprehended is apprehended as past.¹ Similarly, a non-mental transition of which we are aware is apprehended partly as past, partly as present, and, probably, partly as future. Indeed, the only limits to the extent of past duration which the mind can apprehend in a single act of attention are the limits of recollection. What is plain, however, from a mere analysis of the specious present as described by psychologists is that any event of which we are aware is partly recollected. Thus we are told that part of the specious present is felt to be waning and escaping us. It is. And the reason is that it is recollected and that the hold of our attention upon former things, even if not appreciably relaxed, feels less secure. Indeed, this point is very plain if we consider what is meant by the waxing or waning of presentations in the 'specious present'. These terms are comparative. The waning part of the presentation grows fainter before our eyes. It is felt more and more faintly than it was before. But this faintness is relative, and relative in the making. The waning portions of a presentation are not necessarily the faintest portions, since they may be more vivid than the other portions despite the fact that they are waning. In a word, we are aware of a process of transition, of a changing event in which there is not simultaneity but succession. We should conclude, then, that there is an element of recollection in all temporal apprehension.

This result is very important for the analysis of recollection, and a statement of its importance will fittingly conclude the discussion of this part of the subject. In the first place, it implies that direct apprehension of the past is not merely possible, but that it always occurs when there is apprehension of time. It is very hard, on any theory, to believe that our knowledge *that* we have had previous experience (which is implied, as we have seen, in any analysis of recollection) could be mere knowledge-about. How could we know this unless we knew the past, and how could we know that our present images represent the past without direct acquaintance with that past? The suggestion that this reference to the past may somehow be elaborated from the specious present has proved to be untenable, and the inference seems

¹ It may be objected that this statement cannot hold of the first moment of any given transition. The answer is that the transitions are not really discontinuous. The pulses of attention are separable from one another only in the sense in which waves of the sea are separable. Thus the statement in the text holds without qualification.

plainly to be that most so-called memory-images in recollection are the very past events themselves. For, if they were not, our minds, in recollecting, would have a double object before them. We should be aware both of an image and of the past. And this does not seem to be the case, at least with regard to explicit memory-images. The problem whether there are *some* present images in the case, principally of a nascent or penumbral sort, will be discussed in the sequel. Meanwhile we may note that our result harmonises fully with the literal implications of language, a consideration which ought to have some little weight. That is retained which was once attained, that recognised which was previously cognised, that represented which was formerly presented. And nothing should be said to be reproduced unless it was previously produced.

In the second place this analysis of the 'specious present' shows that perceived events and remembered events need not have any of the differences that hold between the corresponding experiences of remembering and perceiving. If time were wholly a phenomenon of the spirit this conclusion could not be avoided, and it would be disingenuous to search for plausible evasions. Again, if pastness, presentness and futurity were wholly objective, a present object, *ex vi terminorum*, could not become past without thereby becoming a different object. But if, as we have argued, the characteristic experiences of presentness and the rest belong to the mind while the order of earlier and later is objective even within the 'specious present,' there is no serious difficulty in the case. An event has eternally the same place in the order of earlier and later whenever we happen to contemplate it. The changing experience of the felt 'now' belongs to the mind only.

Let us turn to association and to its connexion with recollection and memory. The process of association itself has been analysed so frequently and so minutely that a detailed discussion of its forms and principles would be out of place here; but a brief explanation is necessary in order to define the subsequent argument.

Association is always redintegration and necessarily implies some previous integration (even if mere conjunction) between the elements redintegrated, and a resemblance between something in the present (or in the immediate past) and the idea redintegrated. This resemblance gives association its cue. The result of association is the re-appearance of that which was previously integrated.

This analysis holds of both forms of association, the

association of similars and the association of the contiguous, despite the manifest difference between them. A typical example of the first sort would be an occasion in which I find myself thinking, without apparent cause, of President Roosevelt, and discover that the immediately precedent event in my consciousness was a glance at a stranger whose features resembled those of the President. In this instance there is clearly resemblance between the cue in the immediate past and the idea associated. And there is also previous conjunction between the stranger's type of features and those of President Roosevelt. A typical instance of the second kind of association would be an occasion in which I find myself thinking of the Great Court of Trinity College, Cambridge, and discover that this idea arose immediately after I had been looking at President Roosevelt's photograph. In this case there is redintegration of the scene in which I previously saw the President in person. For I saw him once in Great Court, and now I redintegrate the part of this formerly experienced conjunction which is not included in the link of resemblance supplied by the photograph. I redintegrate Great Court without Roosevelt. And the principal difference between these two kinds of association is that in the former of them the redintegration is of characteristics which always go together in our experience, so that the identical elements of the resemblance which gives the cue must be redintegrated along with the rest of the elements originally experienced as conjoined, while in the latter form of association the associates are separable in common experience, the identical link disappears, and only the remainder of the original occurrence is redintegrated. Features of the countenance are not found in isolation, but Great Court may often be perceived tenantless.

These examples have been chosen for the purpose of illustrating the connexion between association and recollection. In many cases, of course, the ideas associated may not be capable of explicit recognition of this kind. They may have suffered from what Shadworth Hodgson graphically, if metaphorically, describes as 'corrosion, melting and decay'.¹ They may be so inconspicuous that the process of redintegration hurries past them to find something more striking and tangible. But the explanation is always the same. In every instance there has been a previous integration in experience, and the association is always based upon a resemblance in characteristics or relations between

¹ *Time and Space*, Part I., chap. v., p. 266.

the idea eventually associated and its cue. And this fact ought to have an important bearing upon theories of the relation of recollection to other forms of memory.

The accounts of association and recollection in psychological treatises frequently leave the problem of their relationship to the inference of the reader, except with regard to the way in which association may be the chosen mechanism of voluntary recall. It is undeniable, of course, that association is often set in motion for this express purpose, and that it frequently attains the end desired. When we cannot recollect at will we begin a process of redintegration, starting from a point which we conjecture to be in the neighbourhood, temporally or logically, of the object we desire to recollect. The same holds of memory in the most general sense, including arguments, logical connexions and anything else noted once and now felt, even vaguely, to be familiar. Conversely, when we are afraid of forgetting anything at the time we want to remember it, we try to establish an association between it and something which we are likely to notice at or about this important time, as in James Mill's 'vulgar instance' of tying a knot in one's handkerchief,¹ or in his more respectable instance of the custom which some of the old Roman orators practised of associating the heads of the speeches they were preparing with the principal parts, in order, of the building in which they were to deliver them. But many other relevant questions arise in this connexion which are less frequently discussed.

Association and memory have many characteristics in common. Both are merely conservative, for when there is fusion of old and new, as in apperception, it is only the old elements in the new result that are, properly speaking, either remembered or associated. Again, while both imply retentiveness, neither is mere retentiveness. Retentiveness is common to minds and organisms, and may occur in inorganic things. The hysteresis of an aneroid implies retentiveness just as much as the continued weakness of a dislocated joint or repetition by rote. Memory and association, on the other hand, are restricted to conscious phenomena, and that is why a theory of organic memory like Samuel Butler's is justly considered to involve a misuse of terms.

Indeed, it is plain that, since association always implies a previously experienced conjunction or connexion, the objects associated or redintegrated cannot differ appreciably from the objects of memory. How, then, do they differ at all? There

¹ *Op. cit.*, vol. i., p. 323. (J. S. Mill's edition.)

seems to be no important difference, except in the fact that we may associate ideas without knowing that there has been previous conjunction. And this knowledge, though in very different degrees of explicitness, is a necessary part of the analysis of any species of memory. The difference, in many cases, is very marked. Frequently, when an idea arises in our minds through association we simply find ourselves thinking of it, and do not know how it arose or why. Thus I may find myself humming a refrain from the *Mikado* and discover only by subsequent reflexion that the reason why I took to humming this tune and not another one was that the phrase 'retributive punishment' had chanced to occur in conversation shortly before. In the same way recollection is often subsequent to association even when we make use of association for the express purpose of recollecting something we have forgotten. Thus I may have forgotten the Gypsy word for a snake-charmer as stated in Borrow's writings, and have only a vague notion that it was somehow connected with a tree. After a time the word 'sap-engro' comes into my mind, and this is the word I want. But very often I come to think of the word in this way before I am able to recognise that I have got it at last. The word arises by association before I recognise or remember it. And when there is no temporal difference of this kind there is always a logical one, so that association is not memory, precisely because it lacks this characteristic knowledge that the past is involved. Yet this difference, however important, does not, as we have seen, imply any intrinsic difference in the objects of association and memory. For pastness is not a character intrinsic to former things, but essentially a felt relation to the subject.

This analysis clearly implies the truth of James's view that the objects of association are *things*, with the addition that the things in question are past things whether we know this or not. And is not James's view manifestly correct when 'things' are understood in the wide sense which he intended? We associate Sunday schools with hymn-books, lyddite with factories, diagrams with compasses, bells with books and candles. These are things when associated just as much as when perceived; they are not mental processes. But how, then, are we to explain the paradox that, from another point of view, things are not associated at all? Smoke and fire are connected by certain physical and chemical laws; and these are not the laws of association but the laws of nature. And how can association by mere assonance, like the association of 'judge' and 'fudge,' be

said to be of things? Is not association manifestly of ideas?

Association *is* of ideas when 'ideas' are understood in their true and proper sense. An 'idea' is any thing, relation, or process in so far as it is apprehended. This is what Locke or Berkeley meant by it, whatever conclusions they drew. An idea of a ship and a ship itself differ only inasmuch as the characters and parts of the ship which any given mind apprehends may be far fewer than the totality of its characters and parts. But except for omission there is no difference in logic or existence. Thus it is true that things are associated just because it is true that ideas are associated. And the application to our previous discussion is obvious.

The word redintegration need not cause any difficulty. It suggests indeed, a process of reproduction in which the mind, from the residues of the past that have lingered on into the present, weaves a present image resembling the past. But this interpretation is quite unnecessary. Redintegration is rediscovery, just as the earlier integration implied was originally discovery; for we do not make conjunctions and connexions but find them. Redintegration is a review of former things in which these former things themselves gradually reappear. And it is not surprising that we should frequently have to explore the past a good deal before we can find the things we wish to find.

These conclusions are significant for the general theory of memory. The possible objects of memory, in the widest sense, and the possible objects of association are one and the same. The differentia of memory is only the accompanying awareness of previous occurrence, an awareness ranging from specific recollection to a dateless sense of familiarity. And the possible objects of association are the whole funded wealth of the mind at any time. Association is not, of course, the whole of thinking. On the contrary it presupposes an integration which is not itself association. And neither it nor memory permits of novelty or fresh discovery. But they are the accumulation of all our previous discoveries, and these discoveries are remembered or associated with varying degrees of definiteness. They include 'free ideas' whose significance has once been noted, universals and their connexions previously apprehended, specific and unique recollections, generic ideas whose peculiar contour, as in a composite photograph, has been rubbed off by frequent reappearance in different contexts, ideas 'corroded, melted and decayed,' ideas near the fringe of consciousness, pe-

numbral and subconscious ideas which are mere traces of their former selves. All these are associated in fundamentally the same way, and they cannot differ essentially when they are also remembered. Thus one and the same analysis must apply to recollection and to memory generally. Any idea which is conserved is conserved because the mind is always gripping over into the past, and reattaining, consciously or subconsciously, part, at least, of what it previously attained. The mind retains these ideas as past, whether as unique in the past or as coalescing in the past. The traces are not present traces, but literally portions of the past however fragmentary they may be. They are not the past as it has now become, but the past literally as it was except for inevitable omissions. And these omissions are the real meaning of corrosion or decay.

Some confirmation of the truth of this view may be obtained from the unwitting corroboration of its opponents. It is universally agreed that phenomena of perseveration and 'recurrent images' are instances neither of memory nor of association. And the principal reason stated is that these phenomena are actually present when they are experienced. But what are recurrent images, such as those which a tired huntsman has, when he suddenly feels himself posting or taking a fence although, in fact, he is sitting comfortably before a fire and the hunt is over, except the present reproduction of the day's experiences? And what is perseveration except the continuous reproduction of the same? These images are not memories precisely because they are present. It is the past, *as past*, that must be retained in memory; and this analysis holds of memory in all its forms, from explicit recognition downwards.

A difficulty, however, seems to arise in connexion with a point which M. Bergson has made classical.¹ There can be no doubt that he is right in maintaining that there is a fundamental difference between recollection and habitual repetition. But the more important question is whether this habitual repetition does not imply elements of the same kind as recollection and whether these are not strictly the only memorial parts of it. When a schoolboy says, for instance, that he remembers the first few lines of the *Æneid*, or the proof of Euclid, I., 47, it would be absurd to cavil at the propriety of his language, but it is legitimate and necessary to ask what precisely he means. He means, no doubt, that he has learned these things in such a way that he can repeat them correctly at will. But this repetition in each

¹ *Matière et Mémoire*, chap. ii., pp. 75 *sqq.*

case is genuine reproduction, and a fresh actual performance each time it occurs. The boy can utter again the same words as he formerly uttered in conning over his lesson; and he can either repeat the very words which stand on the well-thumbed pages of his Euclid, or else, if he is intelligent, rethink what he formerly thought when he grasped the import of the proof. This power of repetition may, and frequently does, persist when specific recollection of the process of learning or of its attendant circumstances has disappeared. And the difference between it and recollection seems very marked. If the boy can recollect as well as repeat, it is plain that his recollection of, let us say, the third or fourth occasion on which he conned the lesson over, is very different from the mental processes which are normally serviceable for repetition. Indeed, if he fixes his attention upon this particular occasion or upon any other the process of repetition is sensibly checked.

Mere habit, however, is not memory, except by an abuse of words, just as it is only by metaphor that we can say that a newly-born infant remembers how to breathe because of the ancestral habits that are strong in him. And the new performance itself, the reuttering of sounds or the rethinking of relationships is not memory either, but simply a piece of present existence. The process is called memory because of the ideas which guide the new yet habitual performance; and these ideas are old ideas. Thus there is no real difficulty, or paradox even, in maintaining in face of these facts, that memory is always the apprehension of the past. And the apparent difficulty that recollection may impede the process of repetition is not a genuine difficulty. The purpose of recollection, in this instance, is to keep the attention fixed upon the specific event recollected. The purpose of memory or recollection as a guide to repetition is to keep the attention upon past ideas only in so far as these may serve to guide the repetition, and if the mechanism of repetition is in good order a very slight guidance of memory proper may suffice. Indeed there is always a tendency for the repetition to go on when the attention is diverted. It is not surprising, therefore, that this difference in purpose should lead to a difference in result; but the facts do not show any difference in kind between different forms of memory.

The relation between remembered ideas and the mechanism of repetition is simply the law of *ideo-motor* action according to which attention to any idea always has a tendency to issue in movement of some specific kind. The process of learning, in the ordinary sense, consists in establishing this

connexion so firmly that there is no danger of hesitation or failure. And there are some interesting consequences of this fact. The motor effects of memory may be, and frequently are, incipient and abbreviated rehearsals instead of adequate performances, and it seems to be established that there is motor rehearsal of this kind whenever there is memory, thought, or association, even if only a nascent articulation of words. This explains part of the meaning of those psychologists who claim that there is always a great deal of nascent present imagery in memory, association and recollection. There are always nascent movements in the case, and these are felt to be contemporaneous with the act of remembering. But the more important feature of memory is the renaissance of the past in the sense that objects formerly apprehended are apprehended once again.

We should conclude, then, that there is only one kind of memory, *viz.*, apprehension of something experienced at a previous time. We may recollect this and recognise it explicitly, or we may have forgotten its earlier context, and have no recognition of it except a vague feeling of familiarity. The theory that there are two kinds of memory is due to confusion between memory and repetition. Memory is never repetition in any of its forms, and the confusion depends in its turn on verbal ambiguity. We frequently say, it is true, that we remember a thing when we mean primarily that we can repeat or reproduce it. This power of repetition was learned in the past, but it is not memory at all. It is merely connected with memory owing to the circumstance that the memory, however indefinite, of something formerly experienced guides the repetition in most, if not all, of such cases.

It remains to consider some of the implications of the theory of this paper. It is tempting to hold with Freud and his followers that nothing is ever totally forgotten however difficult the process of recall may be in most instances. This theory implies that everything experienced in the past is for that reason inevitably before the mind at all subsequent periods of its existence. In that case the greater part of the field of memory is always so dim that we are not conscious of it at all, and even the sense in which we may be said to be subconsciously aware of it seems strained and unconvincing. On the other hand, those who dissent from this theory must at least admit that no limits can be set conclusively to the power of memory. It is not only the classical instances of long-forgotten languages spoken in delirium, of the man who described in a fever all the circumstances of an operation which he had undergone fifteen

years before when in a condition of complete stupor,¹ or of the abnormal cases of recall in hypnotism, that show how rash most generalisations on this subject may be; nor merely the extraordinary memory of Mozart or of a hero who, like Panurge on his first meeting with Pantagruel, can speak ten different languages though starving with hunger the while. All of us remember, at times, some trivial instances in a buried past which startle us by the mere fact that they are recalled, and all of us may reach a day in which second childhood reintegrates childhood's memories. We cannot say of anything we notice at any time that we are absolutely certain we shall forget it utterly before long.

On the other hand, as we usually suppose, forgetting may be the rule and remembering the exception, and the past may often be obliterated as thoroughly as a child's castle in the sands is effaced by the waves. The truth may be that only a little of the past can ever reappear clearly in memory, and that only a little more can reappear dimly. If that be so the fact of memory is simply that when anything is observed which resembles something that has formerly been observed, then it is possible, and sometimes happens, that the mind can attend once more to the original which the present object resembles, with the addition that this possibility is more likely to become an actuality when some condition like the frequency, vividness, recency, or interest of the remembered object is fulfilled. And it may be objected that such a theory is merely a statement of fact and not an explanation.

The sufficient answer to all such objections is that the first requisite both of psychology and of theory of knowledge is to accept the facts as we find them. If the fact of memory is direct acquaintance with past events themselves, the most reasonable plan of investigation is the analysis and description of this fact. The fact itself is as ultimate as the fact of knowledge, and the presence or absence of an adequate theory of its conditions in terms of anything else is beside the main issue. If a theory of memory based on the nervous system or anything else makes the occurrence of the known facts more intelligible than they would be by themselves, good and well. But even if there is a proved connexion between memory and the nervous system and an utter lack of any tenable hypothesis concerning the precise character of this

¹See Abercrombie, *The Intellectual Powers*, Part III., sec. i. The instances in this book seem to be authentic, though the proof of their authenticity is not usually circumstantial enough to satisfy the requirements of the Society for Psychical Research.

connexion, the facts of memory are not thereby impugned. The *lacuna* in this case should be regarded as the beginning of a quest and not as an obstacle. The case is different if the facts themselves are misdescribed and science hindered by an insistence on features which do not belong to them. And the justification of discussions such as the present one is only that it attempts to show some of the fundamental characteristics of a true analysis.

IV.—WHAT IS FORMAL LOGIC ABOUT?

BY ARTHUR MITCHELL.

I. THE PRESUPPOSITION COMMON TO INTELLECTUALIST TRADITION AND TO PRAGMATIST CRITICISM.

THE traditional intellectualist conception of the logical interest as the nature of thinking, or reasoning, is a presupposition shared by recent pragmatist criticism. The pragmatist impugment of the traditional logic not only countenances this presupposition, but explicitly rests its case upon it. Thus Schiller, who thinks that formal logic is an essentially futile enterprise because it is more than two thousand years old and still a muddle, finds "not only that ordinary human thinking continues to pay scant respect to Logic, but that the logicians themselves continue to differ widely as to the nature, the function, the value and even the existence of their science. . . . To be a consistent Formal Logician is probably beyond the power of any man, psychologically as well as logically, and even the greatest formalists do not find in their 'Logic' complete intellectual satisfaction, and may not infrequently be caught deviating from their ideal into excellent sense."¹ The dedication of Mercier's *A New Logic* commemorates a long friendship "variegated by many a strenuous argument, begun, continued and ended without recourse to the syllogism". In the Preface, Mercier says, "I find that valid conclusions can be reached only by strictly departing from the methods of Traditional Logic. . . . Its whole system is insufficient, defective and erroneous from beginning to end." And Sidgwick's recent *Elementary Logic* is divided into two parts, the first of which teaches logic "as she is taught," as a subject to work up for an examination; the second part is a wholesale repudiation of the first, and is written with the single aim of forestalling risks of error in reasoning, inasmuch as the traditional logic is a danger to all who think as well as a nuisance to all who have to pass examinations in it.

Thus the point on which this pragmatist indictment turns

¹ *Formal Logic*, pp. vii. and xi.

is that the traditional logic is a false account of thinking or reasoning: thinking pays scant respect to it; our conclusions are otherwise arrived at; it is a danger to all who think. The criticism is focused upon the intellectualist bias for a certain syllogising conception of thinking. The correction is to consist in a shift of emphasis from the intellectual and abstract to the intuitional and concrete mode of consciousness. The disputants in such a controversy should go into training; the last word will belong to the physically fit. For the logical interest is not the nature of thinking, at all; and if the matter, method and validity of a science depend on its defining interest, these present *casus* of the war about logic must remain world without end untouched by the issue of any controversy concerning the nature of thinking.

II. TWO SOURCES OF DIFFICULTY IN SCIENTIFIC ABSTRACTION.

There is nothing queer in the fact that the matter and method of logic has not, even up to the present late date, ever been well defined. The intellectual feat called "scientific abstraction" means, for one thing, that, from the tangle of motives to cognition which the data of concrete experience involve, one such motive, or interest, is sufficiently extricated to be capable of a satisfaction of its own, somewhat independently of the rest of the snarl. This abstraction of science, however, is toilsome and progressive, not achieved at a stroke, perhaps never so thorough that it may not be bettered. It seems to be made difficult notably by either of two characters of experience. One is the intersection, in the self-same concrete matter, of interests that are mutually irrelevant and therefore apt to darken the scientist whose eye is not single. Consider the fact of *meaning*. Dizzying fact! Dizzying because it is so difficult to consider it with an eye single to one at a time of the enchaining interests that meet therein—its psychology, its epistemology, its ontology, its rhetoric, its logic. So difficult not to tangle all these absorbing *ways* of considering it into a snarl of threads baffling to continuity and sequence in the following of any of them.

And then—for the other notable stumbling-block to scientific abstraction—there is the conditioning of one science by another. Prof. Marvin's contribution to *The New Realism* elucidates (on pages 45 and 46) this relation between sciences. Mathematics conditions mechanics and physics in that, while investigations in these latter sciences could be

faulty without implying mathematical error, errors of arithmetic inevitably falsify study in the dependent sciences. Unless a large part of mathematics be true, these must be totally false. They have their own degree of abstractness, but the mathematics which conditions them is therein a degree more abstract. Now, the problem or interest defining the mathematics pure of mechanical and physical enrichments is distinct from that of any science thus dependent, but very confusable with it. That man suffers from such obscuring of an abstracter interest by confusion with an interest more concrete, who can seriously make a difficulty, in the arithmetical law that one plus one is two, out of the fact that a drop *combined with* (a relation involving "plus" but more beside) another drop is one drop instead of two drops. Teaching geometry to school children affords instances of similar obscuring of scientific interest by confusing the interest proper to geometrical exercises with more concrete matters. The difficulty is just to dis sever matters of purely geometrical definition from the concreter mechanical and physical phenomena which involve in their definition the geometrical characters, but involve new determinants beside, external to geometry. The frictionless geometrical rotation of points, lines or surfaces is thus involved in physical turning; but this latter adds alloys of friction and abrasion and consequent excentricity.

III. THESE DIFFICULTIES ARE AT THE MAXIMUM IN LOGIC.

Now, when these two primary difficulties in the way of good science are properly taken into account, it is no longer queer, and of course it is not prejudicial at all to the existence of a distinct logical interest, if even the most illustrious doctors of the science have kept on from the beginning until now perpetuating obscurations of this interest by inherited habits of confusion with other issues; since, in the first place, every datum of experience, whatever, is a datum of logic, which means that logical material is involved in the maximum of intersection with other interests; and, in the second place, logic is precisely the ultimately fundamental science, conditional, that is, to all science, "science of science," as Aristotle said. So the difficulty of adequate abstraction in logic is the very limit of this kind of difficulty; and whether or not a designated method in logic, *e.g.*, the intellectualist, may be at fault, the muddled state of the science after a long history—no matter how long—is itself not an indication that the method in question is faulty, but that its application has

lacked rigor—in short, that the determining interest is ill-defined. Let it be recognised that the state of logical matter and method has always been confusion. Logic is indeed the most ill-conceived, disorderly—in short, illogical—of the sciences. But this, instead of being occasion for surprise or suspicion, is what ought to be expected. It is, no doubt, equally natural that the intellectualist logic, which Schiller insists means nothing,¹ has always been a bugbear to the type of mind which is temperamentally averse from analysis and abstraction. Such ground of objection to formal logic, however, is invalidated by the mere existence of the world-old interest out of which the enterprise is generated.

IV. THE CONFUSION OF LOGICAL ISSUES WITH OTHERS.

Thought has its objective content, to be sure, and this is matter of science—of logic, in fact. But it is only inasmuch as thoughts are *meanings* that they are matter of logic; for the matter of logic is assuredly meaning, as the word testifies. *Lego* differs from *phemi* as *dico* from *loquor*, *dire* from *parler*, *sagen* from *sprechen*, *say* from *speak*. No one ever regarded logic as science of speech (even if, by a confusion of terms, some have said they do regard it so), because speech is not essentially significant. Saying is essentially significant, even when it is careless. Meaninglessness is no defect of speech, and is a defect of saying. And because saying materially coincides with some speech or other, words, too, become matter of logic; but they are such, as thought is such, only in so far as they are meanings. If there be meanings which are not thoughts—if, peradventure (I do not say it is so), perceptions, memories, ideas, for instance, are to be regarded as not thoughts, sometimes or always—then logic is science of more than thought, thought even objectively interpreted; since any case of meaning is its matter.

But the trouble, for the rigorous abstraction of the logical interest, is that its matter, which is meaning, is infested with a swarm of ambiguities due to the intersection, in any actual case of meaning, of so many interesting factors. Whatever be the decision about the denotation of "thought" and that of "meaning," certainly in many cases of meaning, if not in all, some one thinks and judges, or even reasons and infers. But logic is not on that account, or on any account, science of laws of thought or of inference, any more than experimental physics is science of laws of perception because whenever one experiments he perceives. The two systems of laws,

¹ *MIND*, 82, p. 246, and *Formal Logic*, p. ix.

the two sciences, that of the phenomena of thinking and that of what is thought, are distinct in the same sense as auditory psycho-physiology is distinct from acoustical physics: the nature of one's hearing is one thing—matter of psycho-physiology;—the nature of what one hears, another—matter of acoustical physics;—although both factors enter indispensably into any actual case of sound perception. So the nature of one's thinking is one thing, and is the business of ratiocinative psychology, while the nature of what one thinks is another, and is the business of logic; although they are equally indispensable factors in any actual case of thought. The proposition that we don't think in syllogisms would, if true, be nothing against the validity of the science of the syllogism, which science has no concern in the nature of thinking, be it right thinking or wrong, and does concern something else, namely the nature of what is meant. And if whatever is meant can be shown by analysis to be of syllogistic structure, why, then any principles that determine the nature of the syllogism have of course all sorts of importance for the science of what is meant, and will rule the development of this science to the end.

Again, in any case of meaning, some relation or other necessarily exists between the subjective and the objective content of the meaning. But logic is not on that account, or on any account, science of such relations, any more than is chemistry or any other science: in all the data of any possible science such relation is involved. Principles determining the nature of truth and error have just the same relevance to logic that they have to chemistry: it is needful that the study be true, but the nature and conditions of truth in general and of specially chemical truth are external to these sciences in that their respective interests are neutral to any answer to such questions.

This intimate involvement with psychology and epistemology has bedeviled the issue of logical problems and vitiated the method proper to their solution. So has involvement with ontology. Whenever one means, the objective content of the meaning has its status within the realm of being, a status ordered with others by principles determining the abstract and the concrete, the fictitious and the actual, the universal and the particular, the hypothetical and the categorical. But logic is not therefore science of the ontology of meaning-content. The existential import of propositions is a problem as external to logic as that of cosines to trigonometry. Or the place in the order of being which is occupied by universals, the problem what a universal may be, in the

last analysis—such a problem is an impertinent distraction from logical study, quite as the problem of the being of angular magnitude would be to trigonometry. Angular magnitude is *definable* with an accuracy that is satisfactory and final for the purposes of trigonometry. For the purposes of logic, so is universality.

V. THE LOGISTIC DEFINITION OF UNIVERSALITY.

The elucidation of the logistic definition of universality constitutes whatever properly logical material is contained in the jungle of irrelevances labeled "Induction" in treatises on logic. The significance of the "Principles of Elimination" and the five "Causal Methods" derived from them is deep and wide, and logic has its stake in their discussion, since causation is a complication of the relation of ground and consequent, in which logic finds its category of universality. But the interests and purposes of logic are largely lost sight of in the expositions of "causal method". In these discussions analysis discloses, in various proportions, the epistemological interest in the notion of necessary connexion, the ontological interest in notions of identity and temporal process, the psychological interest in mental operations constituting the phenomena of scientific generalisation. The fascination of this pregnant concept of causation has so beguiled the authors of logic that a teacher of the subject who has any conscience finds himself in an absurdly puzzling and apologetic situation. Apparently everything that has occupied attention under the name of Deduction is now abandoned, and integration of the new business in the self-same fundamental problem of logic with "Deduction" is, for the best of reasons, left to the conjecture of the student. Why "Part Two," in the development of a unitary scientific system? Why, in the name of Aristotle, why "Induction"? That "best of reasons" referred to is the fact that there has been no "self-same fundamental problem," all along.

The five causal methods, which are reducible to two, are derivatives of two principles of elimination: That is not the cause of P which is

(1) absent when P is present (*i.e.*, not indispensable),

(2) present „ P „ absent (*i.e.*, „ adequate).

Positively stated: Cause is the name for that physical condition which is both indispensable and adequate. Any indispensable physical condition is a positive factor in the cause; any adequate physical condition contains the cause; neither precisely defines it. Their logical product does so, and is

the adequately indispensable or the indispensably adequate physical condition.

This definition of cause equivaluates it with its effect; for, if either is less or other than the other, the cause is either not indispensable or not adequate. Causality is then, by such a definition of cause, not, strictly speaking, a genuine relation in the physical department of being. And it has no meaning outside the physical. It is, rather, the common limit of two variables: (1) more than indispensable adequacy of physical conditioning, (2) less than adequate indispensableness of physical consequentiality. Which are genuine relations, since they involve, as causality does not, distinctness of terms. These relations are asymmetrical, and they constitute opposed aspects of a single relation. And this relation is the fundamental physical reality. Its surd limit was designated above "causality". It will be convenient, without consulting etymology, to distinguish the significant reality from its limiting surd by the term "causation". The cause-of-effect sense of this relation applies to a meaning (thing or event) in its character of adequacy of physical conditioning: by virtue of being an adequate physical condition a meaning is a real cause. The effect-of-cause sense of the same relation applies to a meaning in its character of indispensableness of physical consequentiality: by virtue of being an indispensable physical consequence a meaning is a real effect. Why not *inevitable* consequence? The effect is inevitable, no doubt; but its consequentiality is an indispensable constituent of the nature of the cause, in the complete explication of the latter.

Now, the regulating idea of empirical science is ("pure") causality, and the two irreducible causal methods have for objective the approximation of "causation" to "causality". Agreement eliminates inadequacy, in theory; difference, dispensableness. But analysis of nature presents technical or pragmatic limits which prevent realisation of the identifying limit of this approximation of naturalistic research to the research of science "pure" of involvement with nature. If "nature" is that department of being which is spatial-temporal, "pure" science becomes that ultimately abstract discipline which is conditional to empirical science, and whose matter is the principles determining the modes not merely of spatial and temporal concretions (the modes of causation) but of conditioning in general. Such science I take to be equivalent to the view indicated above of the nature of logic.

The generic relation of determinate conditioning, namely

implication, comprising non-causal as well as causal determination, must, like causation, in order to be a genuine, significant relation, involve distinctness of terms. The limiting surd of such relation, in which the conditioning is at once adequate and indispensable, and wherein distinctness of terms vanishes, defines the logical term "identity" or "sameness," which has thus the character, in common with "causality," of common limit between two variables, the former two now generalised as (1) more than indispensable adequacy of conditioning, (2) less than adequate indispensableness of consequentiality; which again are mutually opposite senses of a single asymmetrical relation, in this case implication. The ground-of-consequent sense of this relation applies to a meaning (term or proposition) in its character of adequacy of conditioning; the consequent-of-ground sense of the same relation applies to a meaning in its character of indispensableness of consequentiality. The relation of determinate implication then defines the logical term "universality," with its two senses of universal-particular (ground-of-consequent) and particular-universal (consequent-of-ground): by virtue of being an adequate condition a meaning is a universal; by virtue of being an indispensable consequence a meaning is particular.

VI. THE CONDITIONAL PRIORITY OF LOGIC.

It seems almost unnecessary to remark that Schiller's charge that logic means nothing, and Mercier's that it is a silly game of spoof,¹ are not validated by the fact that the system of phenomena to which the laws of logic apply are neutral to any theory of reality. In any sense in which such charges can apply to formal logic, they apply to every other science, to science in general. For the validity of any scientific system depends on an ontology, tacit or explicit, which is applied to it. Every science is, in itself, a game, if you like, in this sense. Whether it is silly or not depends on whether or not the phenomena with which it deals enter in any determining way into interests that are serious. Seeing that there is no interest which the logical system does not determine, logic can hardly be silly.

Indeed, that is a conspicuously sound and important idea of Aristotle's (from the intellectualist point of view), that logic is science of science. Logic is not, because it is of like objectivity with other sciences, on that account logically co-ordinate with any science. Logic is logically prior to all

¹ *MIND*, 92 and 93.

other sciences in the sense that the fecund system of objective meaning (of objectivity, in short) is conditional to the facts of any science, while the converse is not true. The logical system bears that asymmetrical relation to science in general, and to every science, which mathematics bears to mechanics and physics. To every science? This would seem to require that logic condition itself; a paradox, if you like, of the same order as the idea of self-consciousness. But it is no more paradoxical than that; and equal rights may be claimed for this twin brother, in view of a certain explanation of the idealistic disposition to conceive the object-matter of logic as subjectively determined. This is due to confusing two distinct concepts, logical conditioning and epistemological polarisation. Being is polarised in objective and subjective aspects or serial orders, which imply each other in the sense that each conception—objectivity, subjectivity—depends on the other for its meaning. But this co-functionality or co-implication of the polarised aspects of being is not a conditioning of either aspect in the sense in which objectivity conditions the subordinate objective systems of meaning. For this polarisation is a reciprocal or symmetrical relation, which the conditioning of logical determination is not. They are therefore mutually distinct relations.

If the notion, then, "science of science" seems to involve a regress to infinity, the ineluctableness of this regress is at any rate no more vicious than its subjective counterpart, in self-consciousness. In whatever sense the subject is capable, without contradiction, of playing object to itself as subject, in the same sense, I should say, it is inevitable that objectivity, the logical order, conditioning all objective systems, of which itself is one, must be capable of playing condition to itself as conditioned. Any transcendentalising that may be required in the subjective aspect of being is equally inevitable in the objective aspect!

VII. THE OBJECTIVITY OF LOGIC.

Whatever may condition the logical system, and on any epistemology, whether realistic, idealistic or transcendental, the logical system, of *what is meant*, is a phenomenon as empirically given as a geometrical or a railroad system, and of a definition, and hence an objectivity, as indefeasible as theirs.

The objectivity of logic is implied by any epistemology that is not sceptical. For it is implied in the affirmation

that a meaning means something distinguishable from the psychological process, the "state" of mind which is the meaning act. Granted that a meaning is necessarily meant by somebody in particular; granted that, as part of the content of somebody's consciousness, a meaning is subjective: still, if nothing is a meaning unless it is meant by somebody, neither is anything a meaning unless it means something; and this is to say that, if a meaning has subjective content, it has also objective content. Why "also," if they are an identical element of diverse contexts? Because the contexts are diverse. The nature or essence that is meant may be, and even must be, less than exhaustively comprehended in any assignable subjective content. If one means a material thing, the distinction between the subjective content and the objective content of the meaning is the distinction between a certain detail of the conscious figure or pattern and something indefinitely more, something which develops, under continuous inspection, an inexhaustible fecundity of essence which no percept or image begins to exhaust. So, too, if the meaning is an immaterial entity, a circle, say, or the national constitution, again the subjective content is a "state of mind"; the objective content a formidable system of determinants whose complete explication overwhelms any possible effort of comprehension. Only such comprehending state of mind, to be sure, is the meaning so far as the meaning is yours or mine or his—so far as it is subjective. But something *else*, the uncompromising, fecund essence itself, is meant.

The truth of this contention depends, I say, only on the fact that a meaning state of mind *presupposes* something meant, by the necessity of its own nature. The case in which the presupposed "something meant" is a certain logically prior content of the same conscious continuum which comes to refer to that prior content of its own, in proceeding to mean it, is no exception, since here too the meaning state of mind is a referring to what, in the nature of referring (as a relation), must be distinct from that which refers. If *relatum* and *referent* be identical, there is no relation, no referring, no meaning. And to find what is meant to be thus other than the act of meaning it, is to find it objective, to find that the meaning has objective content, something capable of a variety of relations to the content comprehended in the meaning state of mind, the subjective content. Any and every discourse is objective, without a doubt. An unobjective fairy-tale or fantasy is merely an unmeaning one. It could not interest even its author. An

unobjective reverie would be, just so far as it is unobjective, not merely nonsensical, in a certain loose sense that permits of an irresponsible or trivial meaning, but strictly and absolutely meaningless, so as to lack even humour or whimsicality.

Every meaning, then, is public and common, an objective datum for systematic scientific investigation and analysis. This must be the case, I say, since, being meant, it is, in that fact, recognised and therefore necessarily external to any state of mind that finds itself in a position to recognise it. In the case of the "intra-conscious" meaning, the mark and proof of objectivity of what is meant is just what it is in any other case, its inexorably determinate fecundity. The meanings which enter into the fantasy *involve*, they uncompromisingly *imply*, no less than those of sober science. The fun or relaxation of fantasy is an irresponsible, contradictory attitude toward these inexorabilities. All pith and point in it depends absolutely on recognition of the necessities so flouted, without which recognition their flouting were flat as gibberish. The objective order is the order of systematic determination. What is meant is found to be determined in no respect by being meant, but only by laws whose origin is external to the nature of any comprehension that may mean this content. Which laws, determining the system of objective meaning, are, by definition as a system of data, matter of science; and if logic is science of meanings, then this system of laws, and this alone, is what logic is about.

This world of meanings, however, which is the sphere of logic, is evidently everything whatever, the entire universe of being, and is therefore infinitely more extensive than the spatial-temporal world of "real things," if "real" is a limiting term. The sarcasm of a recent writer¹ against the traditional principles of categorisation, "Just deny something of somebody, and it is true of somebody else," is pointless, once the "extension" of valid meaning-content is rightly considered. There must indeed be (though its nature may or may not permit it to enter space or time) some valid meaning which is distinct from any given meaning, in any assignable respect; otherwise the latter meaning is indiscriminate, and so not meant. This is undoubtedly the same as to say that there must be something of which any designated predication is true, in order that it should be possible for anyone to have become aware that it is untrue of some-

¹ L. E. Hicks, "Euler's Circles and Adjacent Space," *MIND*, 83. Also "Is Inversion a Valid Inference?" *Journal of Philosophy, Psychology and Scientific Methods*, vol. ix.

thing. If it be remembered that all the Non-Smiths and also all the Non-Joneses are (not "sombodies," of course, but *are* indefeasibly) genuine meanings, with all the objectivity that anything in the universe possesses, it is inexcusable to say that inversion means it is all one that Smith is honest and that Jones is dishonest. It is not, strictly, "all one" to the inversionist even to say that Smith is honest and that some Non-Smith, indeterminately, is dishonest, although the former does assuredly imply the latter. If they were "all one," however, the latter must also imply the former, which it does not. The inversionist does see that we can know Smith as honest only in the conditions of an experience which has revealed a meaning of Non-Smith character that lacks this very quality belonging to Smith. But it makes all the difference in the world that the Non-Smith character of this necessary meaning is not implied in any respect except the lack of honesty. It is not implied in any of those further respects which are indispensable to constitute it Jones—or even human, or animate, or so much as actual (spatial-temporal). There is no case against Jones, at all—so many things beside him are capable of lacking honesty.

VIII. THE CO-FUNCTIONS OF MEANING.

Three meanings of the word "meaning" are distinguishable. A case of meaning in the psychological sense I take to be a certain mediation between conscious subject and his object; in the epistemological sense, a mediation between subjective and objective content. In the logical sense, then, a case of meaning is, distinctly from either of these, a mediation between *determinants of definition*. However singular a significant term may be as a linguistic element, its individuality is not absolute, but shot through with the system of co-subsistence. For a character (essence, attribute), implies a case of being, to serve as the locus to which the character belongs or applies. And to be, at all, is to be *somehow*, and so to imply a mode of being, *i.e.*, a character. Subject and predicate are thus no less essential to logical term than to proposition, since the fact of logical meaning, whether as term or as proposition, is fundamentally this co-functionality of locus and character that is essential to the constitution of experience and is the method of that mediation between terms which defines the proposition. The logical term as well as the proposition is constituted of three elements. The term is analysable into a character, a locus to which the character applies, and mediation by

co-functionality between them. A proposition is analysable into two terms and a mediation by co-functionality between a variable segment of the locus of one term and the character of the other. The predicate is the "somehow" of a case of being which is the subject, so that the logical element symbolised by the verb "be" is co-functionality between a locus and a character.

To say that the character and locus determine each other essentially is the same as to say that any possible relationship, since it is necessarily a relationship between two meanings, is at one and the same time a relationship between characters (a qualitative relationship), reducible to some form of co-subsistence, obversely independence, between characters; and, on the other hand, a relationship between loci (a quantitative relationship), a case of community, obversely exclusion, between loci. And no criterion, in fact, appears, by which, on one hand, community or exclusion between loci is definable, except co-subsistence or independence between the characters which respectively apply to them; no criterion, on the other hand, by which co-subsistence or independence between characters is definable, except community or exclusion between their loci of application. The point is, then, that a "purely" qualitative relationship is as absurd as a "purely" quantitative one. Each is an illusion depending on a certain complexion of cognitive interest. An objective meaning that is naturally insusceptible of quantitative as well as of qualitative interpretation, is, by the co-functional nature of meaning, impossible.

This co-functionality between character and locus, in meaning, I take to be the fundamental principle of logic, and the truth aimed at in the absurd tautologies styled the Law of Identity. The intelligible meaning of the law depends on conceptually distinguishing, as co-functional aspects of each other, sameness (oneness of character) and identity (oneness of locus). It is then no tautology that no *two* meanings (meanings of mutually external application) are *same* (of common character).

This is an inverse co-functionality. Infinity of meaning is not indefiniteness, since infinities are relatable, as, *e.g.*, in summation of the distances from a point to opposite poles, or inclusion of either of these infinities in their sum. It is therefore true that a meaning that is infinite may, for that reason, necessarily involve infinity in each of its co-functional aspects; while, at the same time, if the denotative infinite and the connotative were distinct magnitudes, their both possessing the co-efficient "infinity" would not of itself prevent their

sustaining a definable magnitude relation to each other—such, for instance, as inverseness.

An inverse relation between them is demonstrable. Thus, the infinite denotation "white horses" is contained in, or less than, the infinite denotation "horses". Now, the connotation of the meaning "white horses" is infinite in that its co-functional locus is included by qualitatively distinguishable loci the number of which is unlimited. And this connotative infinite is *not* contained in, or less than, the connotation of the meaning "horses" (as the denotations of the two meanings are related), but inversely.

That the character as well as the locus of a meaning is a magnitude follows from the co-functional principle. For, any meaning, A , generates two meanings, "Character of A ," A_c , and "Locus of A ," A_l ; each of which derivative meanings generates two meanings, $(A_c)_c$, $(A_c)_l$ and $(A_l)_c$, $(A_l)_l$, respectively. And so on, *ad infinitum*. A character is thus, *qua* meaning, itself a magnitude; it has its own denotation, or quantity.

But it is also true that the meaning "Character of A " is a magnitude of different order from the meaning "Locus of A "; their connotative coefficients, A_c and A_l , are incommensurable. No common denominator mediates a numerical ratio between them. The co-functionality of meaning, generically, has therefore an important difference from the specific relation between trigonometric co-functions. Acute angular subtension is of such a nature that positive values of both sine and cosine are essential to the principle (acute angular subtension) that generates their co-functionality, just as positive values of both locus and character are essential to the principle of logical mediation. In both cases, when either co-function becomes zero, so does the principle. Here the analogy ceases. For, when sine or cosine is zero, its co-function is unity; whereas, when the logical function is zero, its co-function is not unity, but zero also. The difference is that the trigonometric functions are constitutive parts of a unit magnitude, and, so, commensurate; while the logical functions are not constitutive parts, but aspects, of the meaning; and the nullification of an aspect is the nullification of any co-aspect.

IX. DEFINITION AND PROPOSITION.

The presupposition of genus and differentia, in definition, involves a limit, in which the genus is undifferentiated, and

so not defined. Its quantity, exhausting all being, cannot be confined in definition ; its quality is (by hypothesis) void of defining determinants (*differentiæ*).

But this metaphysical predicament is beside the logical interest and responsibility entirely. The achieved objective fact of meaning, as a datum of experience, expresses its nature as a segment or locus of being, in positive ratio to total being, and qualitatively determined by a character indispensable to the distinguishing of *this* segment from any other. The ratio is not a mathematical quantity, evidently ; it is not, that is to say, numerable ; but it is none the less definite, by systematisation in an internally related quantum. So, too, the tale of its indispensable attributes is infinite yet definite since it excludes other attributes, even to infinity, whose possession definitely differentiates other meanings from it.

Furthermore, and corollary to the above, the precise determination of a meaning involves both position and obversion, in that the exhaustion of its locus by a definite segment of being is *pro tanto* its exclusion of and from remaining being ; its implication of certain attributes, indispensably, is *pro tanto* its incompatability with the attributes indispensably implied by segments external to it. The limiting case of definition, when considered in this polarised way of absolute position and obversion, falls apart into antipodal surds of definition, *viz.*, identity and dichotomy ; surds because identity reduces to mere naming, dichotomy to logical "circularity". Position in terms of locus is equivalent to, because co-functional with, obversion in terms of character ; and *vice versa*. The formulation of identity in analogy with that of significant definition requires distinctness as well as mediation between terms ; the formulation of dichotomy requires mediation as well as distinctness. But these requirements involve employment, as significant terms, of the limits of abstraction, to wit "being" and "essence," which, mediating all possible relatedness, are not possible terms, themselves, of any relatedness. The formulation of identity in analogy with significant definition becomes : "Nullity of essence plus S-ness". Evidently the quantitative formulation co-functional with this qualitative formulation is the dichotomy : "Universal being minus the Non-S's". The former pseudo-relation is equivalent to the mere naming of S-ness, since the term first expressed is null ; the second begs the quantitative determination of the locus "S's" in its pseudo-determination of this locus by reference to the locus "Non-S's," which depends on S's.

To sum up : Identity and dichotomy are antipodal surds of significant relation. Identity contradicts *distinctness* : at-

tempt to formulate it in distinct terms nullifies one of them. Dichotomy contradicts *mediativeness*: it distinguishes "the whole" from "the remainder," in order to divide the whole. But "the remainder" is not a significant predicate of "the whole"; for it, again, is null. And no other predicate, by hypothesis, mediates between the divisions of "the whole".

Genuine, or significant, relatedness (*i.e.*, logical mediation) is therefore necessarily a case of non-identical community (obversely non-dichotomous exclusion), if it be expressed in terms of locus; or, in terms of character, it is a case of discriminate co-subsistence (obversely non-disjunctive independence). Regarding the two "senses" of asymmetry as distinct relations, the genus "Logical Mediation" is exhausted by four *sui generis* types of concrete relational complex. Adequate determination of any possible relationship between two given meanings, S and P, necessarily subsumes it, therefore, under one or other, exclusively, of these four *sui generis* types; and any determination of any possible relationship necessarily subsumes it under one or more than one of the abstract elements of relationship into which the concrete complexes are analysable. The *sui generis* types of mediation are the following: In terms of locus, (1) Inclusion of S's by P's; (2) Inclusion of P's by S's; (3) Intersection and (4) Externality between these loci; in terms of character, (1) Implication of P-ness by S-ness; (2) Implication of S-ness by P-ness; (3) Mutually independent co-subsistence, and (4) Incompatibility between these characters. The abstract constituents of these are, in terms of locus, (1) Community; (2) Exclusion; (3) Inclusion; (4) Externality; in terms of character, (1) Co-subsistence; (2) Independence; (3) Implication; (4) Incompatibility.

Intentionally or not, objection to that calculus of meanings which is based by traditional logic on these latter fundamental types of mediation, implies that quantitative determinations are possible, and that spatial determinations, notably, are representable, independently of qualitative determinations, and are so represented by Euler's circles; and that therefore only a certain kind of relationship, which the objection styles "quantitative," can be validly symbolised by relationships between spatial magnitudes. Such objection to Euler's method ignores the qualitative co-efficient inextricable from, because co-functional with, any possible determination of quantity. As for spatial quantity, it can by no possibility elude its qualitative determination, of bearing, or direction; the circumscribing of an area within a plane represents the qualitative individuality and interrelatedness

of a meaning by the indefeasible bearings of this segment of the plane, and exhibits perfectly the inverseness of magnitude between locus and character by the increase of directional specification which diminution of spatial magnitude within a posited (*i.e.*, circumscribed) area involves. The quantitative calculus from such areas is irrelevant to any measurement. Their sizes, that is, are irrelevant to any relations that enter into the symbolism, with the precisely valid exception of the inequality which enters into the definition of inclusion, and is a function of the inverseness of magnitude between character and locus. And the periphery circumscribes or defines the infinite, since the spatial area is no more discrete than is the logical "extension" which it represents.

Reference to the tabular analysis, below, of the concept "Logical Mediation" shows that if a single such area be given more than a single designation, it validly represents the surdity of absolute identity, or sameness, as a mediation between meanings. It exhibits the nullity of mediation where there is no distinctness. And such a figure nullifies distinctness in the aspect of quality by the same stroke as in that of quantity. Or dichotomise the area, and designate each part distinctively. Such a figure validly represents the surdity of absolute dichotomy, or independence by absolute disjunction. For such dichotomy presupposes the contradiction of circumscribing the whole. And the two figures together exhibit the polarity between the two surds: identification of S and P is dichotomy into S and Non-P; dichotomy into S and P is identification of S and Non-P.

All types of mediation are variables; *i.e.*, limits of variation are essential determinants in their respective definitions. Inclusion (*i.e.* implication) and externality (*i.e.*, incompatibility) have no *qualia* save their respective limits of quantity, that are not essential to intersection (*i.e.*, mutually independent co-subsistence); which latter, therefore, but for this point of distinction, would be a species at once of inclusion and of externality. It is generically distinct from inclusion in that, in the latter, community exhausts a term, or one term is constant; while, in intersection, the quantity of neither term is exhausted, or neither is constant. Now, the only elementary *qualia* of inclusion *beside* its limit of quantification, are community between S's and P's and exclusion of a variable ratio of one locus by the other constantly. But both these *qualia* are essential to intersection as well. On the other hand, intersection is generically distinct from externality in that, in the latter, exclusion exhausts both terms, or both are constant; while, in intersection,

the quantity of each term is variable. Now again, the only elementary *qualia* of externality *beside* its distinguishing limit of quantification, are exclusion of a variable ratio of each locus by the other constantly, both of which *qualia* are essential to intersection as well.

Thus analysis of all varieties of adequately concrete, or determinate mediation of locus with locus and character with character into their elementary *qualia* results in two ultimately abstract or generic simples of mediation, those relations to whose propositional formulation the logic of the schools has attached the symbols "I" (the relation of community, *i.e.*, co-subsistence) and "O" (the relation of exclusion of a variable by a constant, *i.e.*, independence of a character with respect to another character); and the determinant of quantitative limit. The latter added to the generic *quale* of community differentiates within the genus that species of community to which the symbol "A" has been attached, the relation of inclusion (*i.e.*, implication); added to the generic *quale* of exclusion, the determinant of limit differentiates within the genus that species of exclusion to which the symbol "E" has been attached, the relation of externality (*i.e.*, incompatibility).

Community, a type of mediation which, because abstractly generic, is not adequately determinate, comprises as species under it, or characterises with its *quale*, the three adequately determinate varieties of mediation: (1) Inclusion (of posited sense, say of S's by P's); (2) Inclusion (of converse sense, *i.e.*, of P's by S's); (3) Intersection. The genus exclusion comprises under it, or characterises with its *quale*, the three varieties of adequately determinate mediation: (1) Inclusion (of sense determined by the quantitative limit in exclusion; say, inclusion of P's by S's); (2) Intersection; (3) Externality. Although inclusion of posited sense, and externality, are adequately determinate varieties of mediation, inasmuch as no other type of genuine mediation is characterised by the distinguishing *quale* of either, yet each is at the same time a generic or elementary constituent of a formal series which includes one term differentiated in a determinate way from the rest of the series. For the *limit* of each of these two types of concrete mediation, at one end of its series (identity in the case of inclusion, dichotomy in the case of externality), specifies within the series a member which, though surd, is a limiting *case*, and so a *member*, of the series.

ANALYSIS OF THE GENUS TYPES OF LOGICAL MEDIATION.

| Designation of Adequately Determinate Mediation in terms of | | Denotative Representation. | | Analysis into Abstract Constituent Characters. | | Limitative: Constancy of |
|--|---------------------------|-------------------------------|--|---|--|-----------------------------|
| Locus. | Character. | Locus. | | Relational: in terms of | Character. | |
| A I | IDENTITY (Limiting surd) | | | 1 | S, P, Non-S and Non-P | O E |
| | Posited INCLUSION 1 | | | 2 | | |
| | Converted INCLUSION 2 | | | COMMUNITY Converted EXCLUSION (O) | CO-SUBSISTENCE Converted INDEPENDENCE Non-P | |
| | INTER-SEC-UTION 3 | | | COMMUNITY Posited EXCLUSION Converted EXCLUSION (O) | CO-SUBSISTENCE Posited INDEPENDENCE Converted INDEPENDENCE | |
| | EXTER-NALITY 4 | | | Posited EXCLUSION Converted EXCLUSION (O) | Posited INDEPENDENCE Converted INDEPENDENCE | S and P |
| | DICHOTOMY (Limiting surd) | | | 4 | | S, P, Non-S and Non-P |

It remains only to emphasise that the result of such analysis is to validate the subsumption, under these four generic types of relatedness, of any possible relation whatever, since these genera are the irreducible elements of mediation between loci and between characters, and experience expresses itself exhaustively in terms of locus, and at the same time in terms of character; that is to say, in terms of being and in terms of essence. To no phase or aspect of experience whatever can the elements of mediation fail to be relevant and determinant; no detail of experience whatever could possibly elude their determination, since experience is essentially significant. Analysis of the given relational combination of concrete experience is the sole business and interest of the formal logician; who therefore, in his research into the modes and conditions of this phenomenon—that is to say, in developing syllogistic theory—has no legitimate regard for any patented method of investigation which this school or that, of epistemology, or of metaphysics, or of psychology, or of grammar, or of medicine, or of any other creature, may hold in esteem as the canonical organ of knowledge.

V.—DISCUSSIONS.

MR. RUSSELL'S LOWELL LECTURES.

In this paper I propose to consider a few of the criticisms of Mr. Russell's *Lowell Lectures* brought forward by Prof. Saunders in the issue of *MIND* for January, 1917. Prof. Saunders attempts to show that on purely general grounds Mr. Russell's results in this book are of little or no philosophical value. It will be my object to prove that Prof. Saunders has not been successful in his attempt.

It appears to be a fact that, on reflexion, it is much more difficult to doubt some kinds of propositions than others, and to doubt the existence of some kinds of things than others. Thus it seems to be more difficult to doubt the existence of our own sense-data than to doubt the existence of other people's sense-data or the existence of unperceived sensibilia.¹ Again on reflexion, the existence of sense-data experienced by us in the immediate past seems less open to question than the existence of points and instants and physical objects which are never given in experience. Then it seems to be much more difficult to doubt propositions asserting that certain spatial or temporal relations hold between sense-data than to doubt propositions about other people's minds and mental states. Further the very hardest propositions to doubt seem to be the Laws of Logic.² Thus there is an obvious sense in which the collection of data that Mr. Russell has specified can be called "hard" data—"data which resist the solvent influence of critical reflexion," and they can quite properly, I think, be called comparatively certain. It seems too, as far as one person can judge, that our own sense-data and the Laws of Logic are the hardest of these hard data and that it is a fact that "the more we reflect upon these, the more we realise exactly what they are, and exactly what a doubt concerning them really means, the more luminously certain do

¹ Mr. Russell uses the name *sensibilia* for those objects which have the same metaphysical and physical status as sense-data, but which are not necessarily data to any mind. See *Scientia*, July, 1914.

² Mr. Russell did not, of course, give a list of the Laws of Logic in his *Lowell Lectures* but a good idea of the nature of one important sub-class of them is given in *Principia Mathematica*, Cambridge, 1910. Cf. Prof. Saunders' article, p. 47.

they become".¹ There is therefore a fairly well-defined body of data which appear to have a comparatively high degree of certainty. In view of the fact that the distinction between "hard" and "soft" data is one of degree it would be impossible to give a precise criterion of whether or not a certain datum is "hard". In his criticism of Mr. Russell's premisses Prof. Saunders has not, I think, adduced any important considerations which cast any doubts on the hardness of the data in question: but just as one can only put forward arguments of a psychological nature in support of Mr. Russell's position on this point, so one can only use the same kind of weapons against it.

After this preliminary discussion of the premisses of Mr. Russell's system we will leave the question of the truth of his assumptions and pass on to a consideration of the development of his system.

Now it must be evident that in general, it is possible to infer from a given set of premisses which includes a principle of deduction, other propositions not contained in this set.² In the system we are discussing, the Laws of Logic are included in the premisses and yet Prof. Saunders takes exception to the fact that other propositions are asserted, apparently merely because they are different from the premisses.³ He asserts that if certain premisses are the only certain facts then nothing else is certain. He, in fact, objects that if sense-data alone are certain in this system (and Mr. Russell has explicitly said that he is going to assume the Laws of Logic to be certain, having given his reasons for considering such an assumption justified) then nothing else is certain. This, of course, is quite true: but Mr. Russell never asserts of any body of facts or propositions that they *alone* are certain. Rather, he suggests that such and such a body be taken as certain. Since the Laws of Logic are included in this body, all logical deductions from the premisses can be justifiably asserted in his system. This class of propositions will, I think, cover all Mr. Russell's statements "constituting his position as such, statements about it, and statements about other philosophies".⁴

¹ It will be noticed that Mr. Russell does not lay himself open to the charge which Prof. Saunders has brought against him, *viz.*, of saying that reflexion upon these hard data makes us realise exactly what they are: the last clause alone follows from the previous ones.

² Cf. *Principia Mathematica* in which three volumes of propositions are inferred from a very small number of primitive propositions.

³ Cf. Prof. Saunders' article, p. 49.

⁴ As I have explained above, Prof. Saunders points out that if only sense-data are certain then nothing else is and seems discomfited with his statement in view of the fact that it itself claims to be certain. This seeming paradox belongs to a type well recognised in modern logic and could, I think, be explained by a judicious application of the doctrine of types to the case in point. *Vide Principia Mathematica*, Introduction, chap. ii.

Having assumed the certainty of this body of data, Mr. Russell attacks an important and interesting problem in physics. Physics consists of a body of propositions expressed in terms of objects not given in experience, such as physical objects and points of space and time. Mr. Russell's thesis is that *in so far as physics is verifiable*, it is possible to give an interpretation of the propositions of physics in terms of objects given in experience. But since no principle by which unexperienced entities can be inferred from experienced ones commends itself as valid, Mr. Russell's only plan is to exhibit these objects as logical constructions of objects given in experience. The propositions in question cannot, I think, be called "impure" propositions in Prof. Saunders' sense; the objects in terms of which they are expressed are merely such as we do not, in fact, experience in sense. In order to give an interpretation of the propositions of physics in terms of objects given in experience we shall substitute certain collections of immediately given objects for objects not given in experience. Further, in order to show that our interpretation is a possible one, it will be necessary to prove that such collections have certain properties. The "relatedness of certain things in certain ways" can then be said to involve "their having certain properties". But by this we do not mean that the things in question are such that we at once recognise that they have these properties: neither do we mean that they "are apprehended to have them on the assumption of their identity to other things known to have them".¹ We merely mean that by a logical process it can be shown that they in fact have the properties in question. It may make this point clear if we consider the question of the construction of points.² We use in their construction sensibilia and the relation of enclosure between two sensibilia—the relation of enclosure by Mr. Russell's premisses is given in experience. A relation called a point-producer is defined in terms of this relation of enclosure: it has to be transitive and to have various other properties. Then a special kind

¹ Cf. Prof. Saunders' article, p. 32.

² Cf. p. 115 of the *Lowell Lectures*. But here another interesting point arises. Physics seems to assume that the space with which it deals is continuous. Now it is impossible, in experience, to verify this assumption—and there appears to be no sort or kind of reason for holding that physical space is, in fact, not discrete. But it is not difficult so to supplement the sense-data given in experience by the assumption of unperceived sensibilia, that a continuous space can be constructed out of them: and the assumption of the existence of these interpolated sensibilia is not contrary to any facts of experience. But we could construct a discrete space out of the sense-data given in experience and this is the important point for Mr. Russell's thesis that *in so far as physics is verifiable*, it is possible to give an interpretation of the propositions of physics in terms of objects given in experience. But the point I wish to make with respect to *how* the properties of these logical constructions are established is unaffected by the fact that in this particular construction that I am using as an illustration, certain sensibilia are interpolated.

of series called a punctual enclosure-series is defined: any set of objects is an enclosure-series of any two of them one has to the other a relation of enclosure: further under a certain condition a series is called a "punctual enclosure-series". Then a "point" is all the objects which enclose members of a given punctual enclosure-series. It should now be evident that one could hardly pretend to an immediate knowledge of the properties of points so constructed. It is not at all obvious that they do, in fact, have the properties which geometry requires of them. But it is easy to see that it is possible to work out their properties by means of logical processes. The precisely analogous work of discovering the properties of logically constructed numbers and showing that they are such as are required in arithmetic is exhibited in some detail in *Principia Mathematica*.¹ Moreover, these numbers and points are not "reasoned" to have certain properties on the assumption of their identity to other things known to have them: we do not assume that there are such things as points and then call in our crude geometrical intuitions to help us, first because our constructed points are of such a complicated structure that the intuition is powerless before them; and secondly, because the essence of this method is not to assume the existence of these objects. Thus these points are not known to have certain properties except by a process of logical deduction nor are they reasoned to have them on the assumption of their identity to other things known to have them, as Prof. Saunders suggests.

Further as Prof. Saunders points out, of course constructed entities are not facts in the sense in which we speak of sense-data as "facts" of sense: but, it is this very characteristic of constructions that makes the theory we are discussing, better than those hitherto formulated. Before, it had been thought that it was necessary to assume the existence of physical objects and other objects not given in experience in order to find a possible interpretation of the propositions of physics. Mr. Russell has shown that an interpretation which does not involve their existence is possible. And in pointing out that Mr. Russell's interpretation has this merit, I meet Prof. Saunders' demand on page 32 for "some important sense" in which Mr. Russell's hypotheses are "better than those hitherto formulated". I will now try to show why an interpretation not involving physical objects is, in an important sense, better than an interpretation which involves physical objects.

Let us take a very simple case and consider possible interpretations. Physics gives the proposition "this physical object is to the right of that one". A rough interpretation can be offered as follows: There are two sense-data which are aspects of this physical object and that one respectively, and there is a certain relation between them. But Mr. Russell has shown that it is possible to connect the sense-data usually called "aspects of the

¹ *Vide* vol. ii., section A.

same thing" by means of continuity and certain causal laws without assuming there is one thing of which they are all aspects. Thus a second interpretation can be given: There are two sense-data which are 'aspects of the same things' as certain other sense-data and there is a certain relation between them. This interpretation does not involve the existence of physical objects. Now it is evident if the first proposition is true, so is the second: but that if the second is true, the first may or may not be true. Thus we have two propositions q and r (say) such that q implies r and r does not imply q .

Then ¹ I would maintain that, under these circumstances, one can properly say that r is more probably true than q . Therefore the second interpretation is, in an important sense, better than an interpretation involving the existence of physical objects. Thus for Prof. Saunders' statement I., I would substitute the following proposition: An interpretation of the propositions of physics not involving the existence of physical objects, etc., is more probably true than an interpretation assuming the existence of these objects. Then in answer to Prof. Saunders' objection α , I would maintain that from the premisses it follows that the logical constructions in question involve as constitutive entities and relations only sense-data and such relations as are given in experience and that therefore they are real and abstract in his terminology: and further that in point of fact Mr. Russell has given an interpretation of certain propositions in terms of logical constructions of hard data and has indicated general methods by which it seems possible to do it in other cases. In answer to β I would say that the interpretation we have discussed is in a perfectly definite sense more probably true than others given and as explained above preferable to those hitherto formulated.

¹ Cf. Mr. Russell's *Problems of Philosophy*, p. 125.

D. M. WRINCH.

ON RELEVANCE.

A FRESH logical point is incidentally suggested by a recent discussion in *MIND*: namely what should be meant by 'irrelevance' in a discussion? In No. 100, page 518, I had accused Dr. Mercier of irrelevance, and he now (in No. 103, pp. 342-347) seems more concerned to rebut the charge than to inquire seriously whether perhaps there is something in it. This probably points to a difference in our conception of the nature of the fault itself. While I conceive it as, in general, an extremely common and excusable kind of mistake, he apparently conceives it as at best an easily avoided blunder. Intentional irrelevance is of course not here in question; for that I should have no excuses to make. The examples noticed in No. 100 were all of the most innocent and natural kind, the kind which forms the substance of almost every philosophical dispute, just because in philosophy there is so little room for dispute about matters of fact.

The examples referred to are fairly typical, and we can now revise them in the further light of the defence put forward by Dr. Mercier. I objected that certain remarks of his are irrelevant to certain questions, and his answer is in effect that they are relevant to others. For no question was raised between us about the general connexion between clear thought and elegant language, nor about the disrespect due to unintelligible statements. The question was about a particular case of clumsy expression which Dr. Mercier admittedly (p. 343) does *not* accuse of being unintelligible. Granting then that literary or grammatical criticism is also logical criticism when it complains of a lack of meaning, what has that to do with the verbal monstrosity of the particular sentence in question?¹ Since its meaning is clear, the verbal criticisms are literary as *contrasted* with logical. But they are also irrelevant in another way. We must remember that Mr. Shelton had not a free hand in choosing the form. He had undertaken to show how an implied premiss might be forced into a

¹We may notice that there was also some further irrelevance in connecting Jevons's name with this matter at all. His responsibility, Dr. Mercier now declares (p. 347), has nothing to do with the essence of Mr. Shelton's operation—the taking of two 'propositions' as one premiss and concocting the other—but only with the form adopted for translating 'hypotheticals' into 'categoricals'. As a fact, however, Jevons was not responsible even for this. The same form was used for the same purpose, some fifty years before, by Whately (*Logic*, Bk. iv, § 6); and the real originator of it may have been earlier still.

certain traditional mould. He proceeds to do so, and the result is inelegant, as every one agrees and as those who know the literary defects of Formal Logic might have expected. But the inelegance, we claim, does not affect Mr. Shelton's success in his undertaking; it is due to the limits of style to which he was *ex hypothesi* restricted. Dr. Mercier complains that Mr. Shelton, when *not* left free to choose a natural form for the implied premiss, makes use of one which is unnatural. If Dr. Mercier had undertaken to travel to Scotland in a cattle truck and had succeeded in doing so, and if I were to claim that because it was an uncomfortable mode of travelling he had failed in his undertaking, would Dr. Mercier think my objection relevant?

Again, since Mr. Shelton took a pair of so-called 'premisses' and regarded them as together forming a single premiss, it still seems to me that in order to be relevant any criticism must recognise that one of the questions he raised is whether they are really 'the premisses' or not; and that to beg this question would therefore be to ignore part of the point at issue. On the other hand Dr. Mercier has a clear right to explain that in calling them the premisses he is only following a custom he deplors; and, accepting this explanation, I see that my objection was groundless so far as he is concerned; this particular irrelevance, I willingly agree, is not to be laid to his charge. My objection itself was therefore irrelevant.

As regards the other two charges of irrelevance, Dr. Mercier seems to have somehow overlooked my explanation of them (No. 100, p. 519)—that, on account of certain specified ambiguities in the questions raised, no direct answer that can be given to them would be relevant to the difficulties they profess to deal with. These ambiguities are, I think, important, and I hope that in any future remarks Dr. Mercier cares to make on this subject he will either show their unimportance or take them into account.¹ What I meant was that, as against those opponents who see the ambiguity of the questions—and who hold that the use of a universal in reasoning is only required where (1) the argument is not merely verbal, and (2) the need of proof is felt—it is irrelevant to show that no universal is made use of in (1) merely verbal substitutions or (2) conclusions reached uncritically or assumed to be self-evident. In the case of the simple *a fortiori* argument from which the discussion started it is true that in daily life we never dream of doubting the conclusion, but the question as it arose was not about this sensible and careless procedure, but about the pro-

¹ A fresh example of his ignoring them occurs on page 346, where he misquotes me as actually using one of the ambiguous phrases—"we obtain this conclusion through" a universal. If he would re-read the passage (No. 100, pp. 520-521) he would see that I not only did not use this phrase, but explained my avoidance of it. And Mr. Shelton's comments, at page 358, show that my meaning was clear at least to him, though he thinks the limitation unnecessary.

cedure of any careful logic *if* we should happen to want to use it. What gives some value to this 'if' is the difficulty of drawing any clear line between conclusions which can and which cannot be usefully doubted. That may be some excuse for Euclid's thinking it worth while to set out his obvious and tiresome principles in verbal form.¹

Dr. Mercier's remarks in No. 103 contain at least two fresh irrelevances. First, it is evident (p. 344) that he and I mean something different by a 'syllogism'. The definition I give to the word, as indicated in No. 100, at the top of page 520, is "the application of a general rule to a particular case". Now Dr. Mercier cannot mean that *this* process is "powerless to cope with facts asserted as true" or that it is "a small and insignificant part of the machinery of inference". What he apparently does mean—and what no one would dispute—is that when the application of a rule to a case is *used as a mere supposition*, then it is not concerned with facts asserted as true; and that this tentative use of it is only a small part of inference as a whole. If this is what he means, how does he suppose that his view conflicts with mine, and what is then the relevance of his protest? A question might be raised about the value of his proposed restriction of the meaning of the word 'syllogism,' and we might disagree about that. It seems to me better to recognise three different uses of a 'syllogism'—three different ways in which rules may be applied to cases: (1) where we assert a conclusion and support it either by asserting both the premisses or (more commonly) by asserting one and implying the other; (2) where we do not assert either the conclusion or the premisses, but merely speculate on the conclusion which, if true, the premisses would support; this, I suppose, is 'the syllogism' in Dr. Mercier's sense; and (3) where we accept (whether rightly or not) a rule and an application of it, and draw from these premisses a conclusion we had not thought of before. This last is the rarest and least important use of the syllogism, and no doubt Dr. Mercier agrees with me that it bulks too large in the traditional logic.

There seems to be a difference also between our views of the nature of reasoning from facts. Dr. Mercier's conception of this process would perhaps gain by his giving more importance to the method of analysis. Is it not true that, except in early stages of an inquiry, we always try to look behind the mere number and constancy of our experiences of the C-ness of B? We break up the crude facts into details to which we can give some meaning through our previous beliefs about special *causes and effects*. Each detail so regarded is the (supposed) application of a (rightly or wrongly) trusted rule. Criticism of the process, step by step, con-

¹ At page 347 Dr. Mercier seems to throw doubt upon the intended universality of the theorem proved in *Euclid*, Bk. i, Prop. 20, on the ground that 'a' triangle, not 'any' triangle is spoken of. Then how does he account for the consequences drawn from it in Euclid's next Proposition? This use of 'a' for 'any' is a common English practice, and the objection seems to me excessively formal.

sists in raising the questions (1) whether a given rule of causation is rightly trusted, and (2) whether a supposed application of it properly deserves to be called so. The chief use of this 'syllogistic' view of reasoning from facts is that it filters out for us these two separate questions; and the chief danger of it is that in separating them we are liable to overlook their necessary interdependence, and so to be content with an ambiguous middle.

Secondly, it is irrelevant to describe as a "plain issue" (p. 346) an issue which has already been found ambiguous. By calling it ambiguous I meant that Dr. Mercier's question, as he states it, admits of the meaningless double answer "yes and no," and that these answers can only be reduced to one by removing the ambiguity. In No. 100, page 519, my difficulties were stated, and there is therefore no need to repeat them here. As, however, Dr. Mercier now says that he has no objection to the use of a universal *if it is wanted*, all that remains is to repeat my question whether concocting a universal from a given minor premiss and conclusion is a process that is ever wanted; and if so for what purposes? The meaning of this question may be clearer now that some of the differences in our views of the syllogism have appeared. It seems to me that in reasoning from a fact to a conclusion the attempt to regard that fact (or some detail in it) as coming under a rule necessitates an attempt to state the rule so that its meaning shall be clear. The use of this attempt is that it is only in the form of a statement that the truth of the rule can be carefully criticised. A vaguely apprehended rule may deceive us, and in making it definite we are more likely to discover its faults. I have already (No. 100, p. 521) agreed that the rule implied in the *a fortiori* argument is an extreme case of a rule the expression of which is in daily life unlikely to be wanted. But in view of the difficulty of saying in general which rules on what occasions would gain the requisite definiteness by expression it seems to me better that logic should make provision even for extreme cases, and that we should then, in everyday practice, use our discretion as to calling in logic's aid. Thus I quite agree that to set out the implied major premiss of the *a fortiori* argument is an operation that no one would think worth while *except* when required to do so in the name of logical theory.

The examples here noticed of irrelevant arguing may help to show how many opportunities for it occur innocently in disputes about logical points. Sometimes irrelevance takes the form of proving against an opponent what the opponent freely admits; sometimes of ignoring a distinction on which his argument openly turns; sometimes of forgetting the conditions by which he has chosen to limit himself; sometimes of begging part of the question raised; or again of accusing him of begging a question when he has not done so; sometimes of ignoring an ambiguity which he has asked to have removed; sometimes of ignoring a definition—*i.e.*, a postulate about the meaning of a word. And what is common to all these (and other) varieties is that a meaning has been misin-

terpreted. Now a given misinterpretation may be anybody's fault—or nobody's. There is often no blame to be laid upon the person who commits it; and no blame was laid by me upon Dr. Mercier. No more blame need attach to irrelevance than to our failure to catch a remark in a noisy street. Misinterpretation of a statement, or an argument, is often only a natural result of excusable pre-occupation with some other point of view. Indeed there would almost be something uncanny about a philosopher who never did mistake his opponents' meaning.

ALFRED SIDGWICK.

FORMALISM AND THE *A FORTIORI*.

MR. PICKARD-CAMBRIDGE concludes his interesting Discussion on 'Universals and *A Fortiori* Reasoning' in No. 102 with a doubt whether there exists between him, Dr. Mercier and me a "common basis of an agreed use of words," and whether we are using "terms like 'universal,' 'actual,' 'true,' etc., in the same sense at all". There is, I think, some truth in this complaint, though its purport might perhaps have been formulated more precisely as a doubt whether Mr. Pickard-Cambridge has grasped the bearing of *purpose* on *meaning* and has recognised the ambiguity of the notions of 'truth' and 'validity'. I cannot speak for Dr. Mercier, but I have not myself any difficulty in apprehending Mr. Pickard-Cambridge's position and cordially sympathising with its embarrassments. Moreover, to raise this question of the meaning of terms is assuredly the beginning of wisdom in discussion, as Socrates perceived; but it should be raised at the outset, and not at the end, of the discussion. Especially where the discussion arises out of an attack on a traditional dogma. For while the attack is likely to take the form of suggesting that the terms of the doctrine are inadequate, ambiguous and in need of further distinctions, the defence is very apt to make a minimum of apparent concession to cure the most patent inadequacies, without much regard to consistency and the logical consequences, and then insensibly to slip back into the old terminology.

This is in general what happens in attacks on Formal Logic. The logical integrity of its line of defence has been broken in many places, and makeshift shelters have been improvised for its fugitive garrison on any ground that seemed available. But whether that ground is really defensible has still to be tested.

1. To take first the reference in logic to the purpose of the argument. Here the contentions of the attack are that a purpose always exists, that a knowledge of it is necessary to determine the meaning of every term in every assertion, that every real logic must take it into account, and that it is entirely fatal to any logic which retains any trace of Formalism. These points are so well taken that overt resistance is no longer possible. It is admitted, therefore, in a general way that thought is purposive, and Mr. Pickard-Cambridge also does not deny this. However, he hardly seems to have understood how much is involved. His comments on my use of the notion of the argument's purpose render this quite clear. I had argued against the 'universal validity' of the form $A > B$,

$B > C$, $\therefore A > C$, that the differences in magnitude might be quite irrelevant for the purpose in hand, so that the notion of 'equal' might describe the actual situation better than that of 'greater'. This common-sense remark Mr. Pickard-Cambridge treats as a mystery intelligible only to pragmatists; it is to him "simple nonsense—a contradiction in terms". For "if A is even microscopically greater than B , I cannot see how 'for the purpose in hand,' or for any other purpose, it is appropriate to call the proposition¹ that it is equal to B a 'truer' one. I should have thought the proper way to characterise such an assertion would be that it is a falsehood whose falsity, however, for the purpose in hand, does not matter" (p. 215).

This criticism shows how unable Mr. Pickard-Cambridge is to get away from the notion that there is one fixed truth *per se* which inheres in the nature of the object it is 'about' and is independent of and unaffected by what any knower wants it for. It has not yet occurred to him that particular objects, and so all the truths about them, are products of our selection. But, of course, it follows that if this notion is 'valid,' no reference whatever to a 'purpose' is admissible. The 'purpose' must then *always* be irrelevant to the 'truth'. Nor can we compromise the situation by allowing the knower to have a purpose *in petto*, provided that he is thoroughly ashamed of this *partie honteuse* of his thought, and consents to its never being mentioned in public by a pure logic.

If, on the other hand, we draw the logical consequences from the existence of purposes, and allow ourselves to contemplate the process of adjusting the meanings of words to the meaning we wish to convey and to the purpose with which the words are used, is it not equally clear that it is neither nonsense, nor even a paradox, to treat as 'equal' things between which only irrelevant differences of magnitude exist? Let us take a homely example, containing, I trust, nothing mysterious in Mr. Pickard-Cambridge's eyes. Suppose an object, say his hat, has fallen into a pond, but so that he may hope to reach it with a stick. He cries out, 'Give me a stick, the longest you have,' and I, fortunately, have three available, all approximately equal. Should I reasonably go off thereupon to examine them under a microscope in order to determine which was 'really' the longest? Would not every one—except a formal logician in acute controversial embarrassment—agree that the sticks were 'practically equal'? Nay, common sense will often say, 'equal to all intents and purposes'. This, of course, is going too far. The phrase is not exact. For the sticks are *not* equal for *one* purpose—that of micrometrical measurement. But to make much of this would appear to common sense a quibble and a piece of pedantry.

It would hardly be more favourably impressed by the objection (which I foresee) that though it might be '*better*' to call the sticks

¹ Note how naively the Formalism comes out here. Mr. Pickard-Cambridge is clearly not thinking of actual judgments and purposes but of 'propositions' and possible purposes.

'equal' for the purpose in hand, it was not '*truer*'. And I at least could not be denied the right of equating these terms (in the context), seeing that I have defined truth formally as 'logical value'.

Lastly, I would point out that in this matter Mr. Pickard-Cambridge is notoriously divided against himself. Owing to the existence of a psychical *limen*, his senses all refuse to infer from ' $A = B$, $B = C$ ' that ' $\therefore A = C$ ': i.e., they treat as non-existent differences which are *practically negligible*, while they are yet sharp enough to recognise them when such differences accumulate, and 'make a difference'. Thus they are all thorough pragmatists, and they refuse (on principle) to recognise the ideal of equality his intellect demands. Hence his judgments that two things are 'equal' are, in strictness, always false. And, as Plato knew, the whole sensible world conspires with the senses against a reason that is unreasonable enough to demand 'absolute' equality. No two things can be found in nature that are absolutely 'equal' and 'identical'.

Similar considerations dispose of Mr. Pickard-Cambridge's other illustrations. In dealing with millions differences of the order of sixpence disappear. For 'practically every' purpose. *Not* for that of exact arithmetical computation. But who has ever denied this? Certainly not I, whom Mr. Pickard-Cambridge himself represents (p. 214) as contending only that differences in the purpose of the argument *may* (not must!) affect its 'validity'. But why should arithmetical exactitude be regarded as the only valid scientific purpose? Mathematical truths are all on a very high level of abstraction and never take account of the concrete detail of any scientific situation. Consequently they do not apply to all things, nor to any things in *all* respects. And even where they do apply, they do not apply *exactly*—as mathematicians are perfectly aware. It is mere confusion of thought in philosophers when they appeal to *pure* mathematics to guarantee the 'validity' of assertions *as applied*, and talk as if ideal creations like lines, circles, and triangles were common objects by the seashore. There ought to be a close time for mathematical illustrations in logic for the next ten years or so, in order that the traditional philosophy might have a little time to work out something like a theory of the connexion between pure mathematics and applied, and to discover the real nature of scientific procedure.

2. Mr. Pickard-Cambridge's remark that my criticism amounts to a proposal "to reject the idea of formal validity or invalidity altogether" I can cordially accept. This was indeed my contention (No. 100, p. 514). It is, I admit, a large order, but it is necessary, if we are ever to get clear about knowledge. I have argued the point fully in my *Formal Logic*, and there has been no reply. Moreover, the *a fortiori* arguments are peculiarly adapted to bring this out. To a *strict* Formalism they are all 'invalid'. So soon as the formalism is relaxed a little, the 'forms' openly display the weirdest variations in the matter of 'validity,' which seem to depend on the 'material' circumstances of the case considered.

The sciences are familiar with such cases. They have learnt that hard cases make better 'laws,' and devised profitable means have of coping with them: surely it is not unfair that they should require of logicians some little attention, both to their problems and to their methods. Consider *e.g.*, a case like the discovery of 'isotopes,' as a scientific commentary on the logical assumption that *A is A* universally and eternally. It is fuller of real logical meaning than many bulky tomes on 'logic'. A little while ago 'lead' was as good a 'universal' as could be found in nature. It had well-marked and well-explored 'properties,' a fixed 'atomic weight,' determined with great accuracy, at 207.2, and was considered to be always and everywhere itself, just 'lead'. Logicians regarded the scientific account of all this as a beautiful example of an 'eternal' truth, conformable with the 'law of identity'. Now what was 'lead' for all purposes is so no longer. Chemically pure and spectroscopically indistinguishable 'lead' may have any atomic weight between 206 and 210, and even if the atomic weight of two specimens does not differ, they need not be the same. The physicist, before deciding what to call them, *i.e.*, what 'universal' to use upon them, will want to know where they came from, and what was their past career. *I.e.*, the *history* of 'lead' has become scientifically relevant, and its 'eternal' identity a methodological fiction.¹

The irresistible inference alike from logical criticism and from scientific experience, is that 'formal validity,' is an illusion. I submit, therefore, that the difficulties both Mr. Pickard-Cambridge and Dr. Mercier get into are a capital illustration of the need for the most radical reform, and that on Mr. Pickard-Cambridge's own showing, the case against 'validity' is made out.

(a) He admits me to have shown that in certain cases arguments in the form, *A is next to B, B to C, ∴ A to C*, will be valid, while in others it is 'invalid'. But he "cannot accept the conclusion that we have here one and the same 'form' of argument yielding sometimes a valid, sometimes an invalid conclusion. The additions or qualifications I have italicised alter the form of the argument. We have not one form but three. The first modification gives a form of argument universally valid, the second gives one universally invalid" (p. 214).

In other words Mr. Pickard-Cambridge's way of defending an attacked 'form' is to *split* it, and to allege that some of the products of this drastic operation are sound, while others may go to the—enemy. His method is the same as Mr. Joseph's when he defends the Syllogism against the charge of being either a *petitio* or a tautology by finding it guilty in two cases and acquitting it in one, while admitting that the form of the words does not enable one to distinguish which is which. But Mr. Pickard-Cambridge gives no reason why he should have only three cases to deal with, *viz.*, the original form which is 'invalid' because it is 'ambiguous,' and the forms which are universally 'valid' and 'invalid'. If 'forms' may

¹ See Prof. F. Soddy in *Nature*, No. 2491.

be multiplied at will by reason of the necessities of a logical theory in distress, where is the process to stop? How can it stop short of 'forms' so individual that they are the form of nothing except the particular case in which they were found? But would not this be a *reductio ad absurdum* of the distinction of 'universal' and 'particular'? And yet how can it be known *a priori* that the splitting of a form for the crime of ambiguity may not have to be repeated *ad infinitum*? Or that there will never crop up 'forms' which are, or appear to be, sometimes valid and sometimes not? Certainly there was nothing in the aspect of the original form that portended any such scission. It came into the discussion to challenge Dr. Mercier as a good, honest and respectable form of a *fortiori* reasoning which had about it no pretence of validity (No. 93, p. 78). It developed its present duplicity and multiplicity under the discriminating gaze of Mr. Shelton and myself (No. 96, p. 528, No. 100, p. 515), very much like a star which is single to the naked eye, but double to the telescope and quadruple to the spectroscope. Surely it is useless to divide reasonings into the 'valid' and the 'invalid,' if you have simultaneously to admit that you cannot call any reasoning 'invalid' until it has proved to be bad, and can never call it 'valid' at all, because it may always succumb to a latent but as yet undetected ambiguity?

(b) I would suggest therefore that it is simpler and better to conceive the problem as one of adding specifications to a general formula, in order to apply it to an actual case. This has always to be done in actual reasoning, and forms a problem logic should consider in principle and in its generality. Whenever we try to use any 'form,' whether it is called 'valid' or 'invalid,' 'deductive' or 'inductive,' syllogistic or non-syllogistic, we encounter the same difficulty. The (hypothetical) 'case,' being a selection from a larger whole, always contains *more* than the 'universal' or 'form' or 'law' we seek to apply to it. It may always turn out not to be a case in point at all, or to be so special a case that the conclusion which we want to draw, and could draw on other occasions, will *in this case* fail. As these possibilities occur whenever we pass from any abstract form of words to its application to an actual case, the problem has complete generality, and must be solved as such. It is indeed, as I pointed out (No. 100, p. 514), the problem of assigning values to the variables in a propositional function, in Mr. Russell's terminology.

Now Mr. Pickard-Cambridge's solution has not such generality, but, instead, a singular air of paradox. It merely argues *ex post facto* that the differences in the value of the form, seen after the specification of the cases, prove that the form was really multiple. Of these forms some were good, others bad. No doubt we knew not which was which; but have we not found out? And is not this enough?

No, I should reply, certainly not. It may be enough for Formal Logic, because it is all Formal Logic can achieve, but it is *not*

enough for Science and for the study of actual knowing. For them it is not enough merely to pass an otiose *ex post facto* judgment on the 'validity' of the reasoning, and to leave untouched the questions of how the form is, and should be, used, and what results may be expected therefrom. There is no guidance of actual inquiry. When we selected the form from the possible interpretations that occurred to us we knew of course that it had to be applied to the special circumstances of the case, and wanted to know what specifications would be needed. But the analysis of Formal Logic, having no ambition beyond applauding success and deriding failure, could not help us. We had therefore to *risk* our specifications, and of course the consequences taught us whether we did right or wrong. But the logical merit of the operation did not lie in the form, but wholly in the selection of a proper case for its application. And this vital process is treated as devoid of interest for logic!

(c) Surely, to get out of this impotent *impasse*, it is worth while to conceive the problem in its full generality and integrity. How does a 'form' ever receive the specifications it needs to become applicable to a case? By what means can it be rendered so 'fool-proof' that it cannot be misapplied and yield 'false' results? Are the means used ever formal? If we face these questions, we shall readily convince ourselves that Formalism fails utterly and beyond hope of redemption. No 'form' and no formula, from the syllogism downwards, can be rendered absolutely fool-proof. All may be misapplied. The best grounded calculations may be defeated by the novelty of the case. Hence a particular case may always crop up in which the formula breaks down and yields a false conclusion of which the falsity could not have been predicted, seeing that the conclusion was to all appearance a 'valid inference' from 'true' (*i.e.*, undisputed) premisses.

This breakdown, to which 'valid' forms are liable, may be variously described. It may be ascribed to a 'fallacy of accident,' or to an 'ambiguity in the middle term'. But both these descriptions are *ex post facto*. Before the event the mischief was invisible, and to catalogue is not to cure it, and still less to guard against it. As Mr. Alfred Sidgwick has so admirably shown in the case of the Syllogism, and Aristotle in that of contradictory opposition,¹ the defect (as it must be called from a formalist standpoint) is *inherent in the use of the form as such*. It is not apparent in the words of the form. It does not corrupt the pure 'universal' in its unapplied *otium cum dignitate*. But it may break out so soon as the form is used, and renders it worthless as a guarantee of (real, *i.e.*, 'material') truth. Logic, therefore, must renounce the idea that 'validity' is identical with 'truth,' or even allied to it. If so, is not the whole undertaking of Formal Logic, to determine the value of thought by examining its 'validity,' condemned to futility and failure? Formal Logic has made no reply to this

¹ Cf. my article in No. 89 (pp. 6, 14).

indictment. For over twenty years it has pursued Brer Rabbit's cautious policy. This (with the traditions of the examination-system) has no doubt protracted its existence. But should there arise a serious demand for an appreciation of scientific method will it not deservedly go under?

3. It would seem to follow that the belief in the existence of universally valid forms of a *fortiori* argument, which Mr. Pickard-Cambridge clings to in spite of the overwhelming evidence against them, is nothing but a superstition. An analysis of the general problem shows that there are no 'universally valid' forms. It is therefore perfectly easy to confront such claimants with cases which make their claims look ridiculous. And as Mr. Pickard-Cambridge still arrays them against Dr. Mercier, it may even be a duty to expose them. He argues, *e.g.* (p. 206), that if Peter is taller than John and John than Nathaniel, he can with certainty infer that Peter is taller than Nathaniel. But surely the answer (already given by Plato) is 'that depends on whether Nathaniel and John are growing lads, and on *when* the premisses were acquired'. Again, he argues that a ferret exterminates rats quicker than a terrier, a mongoose than a ferret, and \therefore a mongoose than a terrier. But it would be very unsafe to infer from this that a *particular* terrier was inferior as a killer of rats to a *particular* mongoose, or that 'any' terrier could not do better than any mongoose on a cold day.

The truth is that 'a' does not, in such propositions, mean 'any' or 'all'. It means 'the average'. The proposition is 'general,' but not 'universal,' nor can we make it universally true by grandiloquence about universals. For *latet dolus in generalibus*. And the risk we take in taking it as universal is precisely the risk of real reasoning, which is always experimental. We can endeavour to minimise this risk by making our terms very abstract, and arguing not about actual cases with their pitfalls and infinite complications, but about A's and B's, X's and Z's. This is why logicians are so fond of mathematical illustrations. But even here the risk remains, though it is rendered more remote. For the only way in which abstract symbols can defeat our calculations is by having their meanings changed systematically. And this does not happen to them often. Still it does happen, and the results are then just as unpredictable as when a novelty turns up in nature and upsets an ancient 'law'. The absoluteness of geometrical truth was dissipated into 'hot air,' when non-Euclidean geometries were constructed, in a way poor Euclid could never have anticipated; neither could the inventors of the ω have foreseen the part it would play alike in theology and in the arithmetic of 'transfinite' numbers. The effect in retrospect of such innovations is of course to render the old terms 'ambiguous'. We can no longer talk, *e.g.*, about the properties of 'the triangle' without specifying whether it is a Euclidean or some non-Euclidean 'triangle' we mean. But this sort of 'ambiguity' is ineradicable, and can be rendered very

instructive. For it is simply another name for the infinite capacity of terms to change their meaning, or to have it changed for them by the progressive requirements of a science. To admit the existence of this ambiguity, therefore, as Mr. Pickard-Cambridge does (p. 214), is really to give away his case and to *deny* the existence of 'absolutely valid' forms. And if he allows himself to think about these matters, he will, I am sure, perceive this too. At any rate he will perceive that the simple but slap-dash division of 'forms' into the sheep and the goats, the 'universally valid' and the 'universally invalid,' is utterly inadequate to the facts of reasoning.

F. C. S. SCHILLER.

VI.—CRITICAL NOTICES.

Creative Intelligence ; Essays in the Pragmatic Attitude. By JOHN DEWEY, ADDISON W. MOORE, HAROLD CHAPMAN BROWN, GEORGE H. MEAD, BOYD H. BODE, HENRY WALDGRAVE STUART, JAMES HAYDEN TUFTS, HORACE M. KALLEN. New York: Henry Holt & Co., 1917. Pp. iv, 467.

AMONG the institutions sure to be severely tested by the social convulsions which will follow on the Great War all the world over will certainly be the universities, and the conceptions of knowledge to which they are devoted. For all the world has had so much experience of the power of knowledge for good and evil that there will be a strong outcry for such a remodelling of academic institutions as will make them minister in the most direct way to social needs and to the knowledge which is power. In countries like America and Britain, where there had long been a sharp contrast between academic theory and national practice, and the natural bent of the national mind had always been impatient of the glorification of 'pure' science and of the knowledge which is 'contemplation' or traditional learning, to which the academic life naturally disposes those who lead it, this demand may easily become irresistible, and fatal to the whole traditional order. In particular the claim of philosophy to a place and function in higher education seems destined to a severe harrowing. For speaking generally no votaries of the academic life have taken up a more defiant and extreme attitude than the philosophers, alike in their addiction to 'useless' knowledge, in their devotion to tradition, and in their unwillingness even to conceive their subject as progressive. All over Europe before the War academic lecture-rooms only re-echoed, in all essentials and with minor or minimal variations, four great substantive voices of antiquity, two of them Greek, Plato and Aristotle, two of them German, Kant and Hegel, and philosophy, instead of advancing with the steady sureness of a science, rehearsed only the old problems and the old debates. Nor was the situation materially different in America. For though a few American philosophers had made a radically new departure and a signal advance, by perceiving the theoretic importance of the bearing of practice on theory, they had not succeeded in overthrowing academic inertia. In spite of James and Dewey the mass of academic opinion in

America still followed with conservative docility in the wake of Europe, and recognised her intellectual hegemony.

There is a prospect now that after the War this habit may be broken. The political and economic hegemony of the world will almost certainly move across the Atlantic, and in all that money and equipment can effect American Universities will be enormously superior to European. This material superiority may inspire their teachers with greater confidence in the characteristic ideas of American life, and so, academically also, America may not only declare her intellectual independence but take the lead in the intellectual reconstruction demanded by the unprecedented crisis of civilisation. If so, American philosophers will have a gigantic opportunity. While their European colleagues will be struggling desperately to avoid utter ruin and the sweeping away of the whole traditional learning as an antiquated luxury no longer permissible in nations toiling for a living, and will be rallying round the watchword *videant professores ne quid detrimenti capiat res academica*, they will be free to advocate as truly American and consonant with the demands of the situation the pragmatic method which alone has conceived knowledge as essentially practical and essentially progressive, and ensures scientific progress by condemning as pseudo-science any study that is content to stereotype itself.

The present volume of essays suggests that American philosophers will not be loth to seize their opportunity. It can hardly be said indeed that it rises to the full height of the occasion and views it broadly or deeply enough. It is unfortunately over-technical and too evidently written by professors for professors and particularly for American professors. It seems to have been conceived as a counterblast to *The New Realism*, and to have been planned, and largely written, before the War, when it may have been appropriate and needful to parley with professional colleagues after the fashion of this book. But nevertheless the preface shows that its authors had also higher aims. They wished to exhibit their common pragmatic "attitude in application to specific fields of inquiry" and as indicative of "a courageously inventive individual, the bearer of a creatively employed mind". And their title is surely excellent. It suggests indeed a much-needed systematic discussion of the notions of creation and novelty, which we do not find; but in philosophy, as in most things, novelties are so rare that they may well be hard to understand, and we ought to be grateful that philosophy at last consents to admit that they exist. It is only when the creators of new values are dead and can be lectured on, and their novelties have grown old and familiar, that they can be understood and appreciated.

Proceeding to the several contributions, we note that Prof. Dewey selects as his topic the possibility of *A Recovery of Philosophy* from the excessive conservatism which threatens to 'side-

track' it and its obsolete problems. He summarises the contrasts between the traditional accounts of experience and that required by the actual conditions of life, under five heads—(1) Experience is not a knowledge-affair, but an affair of living. (2) It is not 'subjective' and psychical but is intercourse with a genuinely objective world. (3) It is not confined to *ex post facto* registration of the past, but is an experimental effort concerned with the future. (4) It should not taboo connexions and continuities with the traditional 'empiricism,' which forced its unanalysed prejudices into its account of experience. (5) It is not antithetical to thought, but full of inference, and naturally reflective. For 'ideas,' 'reason,' and 'intelligence' all mean capacity to "anticipate the consequences of processes going on" (p. 21): "any reaction is a venture" involving risk (p. 22). So 'reason' is nothing extra-empirical, and to treat the world as already "fixedly and completely rational" is not only to make change unreal and error unaccountable, but is dangerous, because it ignores the actual efficacy of thought in avoiding error and changing the real for the better. "The problem of knowledge *überhaupt*" is stigmatised as no less foolish than "a problem of digestion in general" (p. 33). For empirically "knowledge is always a matter of the use that is made of experienced natural events" (p. 47), and "the real object or the world or the reality" does not exist (p. 50). Any change "is the change of a real object," and "it is not that knowing *produces* a change but that it is a change of the specific kind described". The traditional view is "a confusion of logic with physiological psychology,"¹ which "has bred hybrid epistemology with the amazing result that the technique of effective inquiry is rendered irrelevant to the theory of knowing, and those physical events involved in the occurrence of data for knowing are treated as if they constituted the act of knowing" (p. 52). Pragmatism on the contrary has not to develop a theory of Reality: "no theory of Reality in general is possible or needed". 'Reality' is "a blanket denotative term" which covers specific events, and "the retention by philosophy of the notion of a Reality feudally superior to the events of everyday occurrence is the chief source of the increasing isolation of philosophy from common sense and science" (p. 55). The essay concludes with some sagacious remarks on the reasons for the widespread failure of technical critics of pragmatism to understand the issues it raised, on the need of the age for "an adequate conception of the nature of intelligence and its place in action," and on the special duty of American philosophy to "bring to consciousness America's own implicit principle of successful action" (p. 67).

Prof. A. W. Moore's *Reformation of Logic* declares the present task of logical theory to be "the restoration of the continuity of the act and agent of knowing with other acts and agents" (p. 77). The tradition, whether called rationalism or empiricism, realism

¹ The text has 'physiology,' which must be a misprint.

or idealism, unanimously regards emphasis on the experimental function of thought as "an attempt to rob intelligence of its own unique and proper character" and to reduce it to a merely psychological affair of disreputable adventures. It is of course true that every experiment is an adventure, but "it is precisely the experimental character of scientific logic which distinguishes it from scholasticism medieval or modern" (p. 78). The traditional logic is an anachronistic science which "attempts to deal with its subject-matter apart from what it comes from and what comes from it" (p. 78). Logical and non-logical observation must be both distinguished and connected. The latter leads directly to conduct, the former constructs or verifies hypotheses which anticipate events experimentally, in order to remove an ambiguity or doubt. If this distinction is not observed, and the logical process is regarded as a mere repetition of the non-logical, inference becomes otiose and tautologous; while if the non-logical is set to perform logical operations, it becomes miraculous. It is futile to seek 'simplicity' in data and objectivity in 'facts': in scientific reasoning the 'simplicity' of the data is never absolute but relative to the problem under investigation, while the 'objectivity' of hypotheses is established by their success in doing their work of removing ambiguity and inhibition in conduct. It follows as a corollary that the truth and falsity of cognitive acts are similarly relative to their success. The 'intellectual satisfaction' derivable from such success is of course relative also. Finally the 'analytic' logic of 'neo-realism' is criticised as a deliberate attempt at "the exclusion of the act of knowing from logic" (p. 103). It has, however, accepted from the logics of the old rationalism, empiricism and idealism the fundamental assumption that the act of knowing is incurably 'subjective'. But how, with this separation of knowing from knowledge, is all osmosis between logic and psychology to be prevented? There is moreover nothing "to choose between hypotheses found ready made in the facts and those which are the 'winged' constructions of a purely psychical mind. Both are equally useless in logic and in science" (p. 109). Again the 'simples' of realism merely transmute logical data into ontological, while the attempt to get rid of the problem of truth and error by making error "a given objective opposition of forces entirely independent of any process of inquiry" merely leads to making "all objectivity erroneous" (pp. 111-112). The only way out of the wood for logic lies in taking the operations of intelligence as real acts strictly continuous with other acts (p. 116).

Prof. H. C. Brown's *Intelligence and Mathematics* undertakes the onerous task of bringing the philosophic interpretation of mathematics up to date. It contains an interesting sketch of the beginnings of mathematics and of the epoch-making advances of modern times, both of which may be commended to the notice of philosophers whose appreciation of mathematics still begins

with Plato and ends with Euclid. After a critical discussion of Mr. Bertrand Russell's theories and after propounding a theory of relation of his own, Prof. Brown concludes that the processes of mathematics "are in no way different in their essence from those of the other sciences".

Prof. G. H. Mead's essay on *Scientific Method and Individual Thinker* points out that in the traditional logic the new facts which come in at the growing points of a science have always been described in *ex post facto* terms. 'Romantic idealism' treats them as embodied instances of universals, without inquiring how the universal is fitted on to the 'instance'; 'positivism treats as instances of a new law what is actually found to be an exception to an old one. The actual procedure of scientific reasoning exhibits a series of conflicts between current theories and new observations; these are resolved by a series of tentative hypotheses of which the formulation is continually being changed and to which the data never do more than approximate. In science therefore, "there is no such thing as formal implication" (p. 213), and the 'universals' used "when applied to nature are all hypothetical," while "experiment is the testing of an hypothesis" (p. 215). But hypotheses are not peculiarly 'subjective,' and there is no difference in kind between "the stuff of the world and of the new hypotheses" (*ibid.*). "Science always has a world of reality by which to test its hypotheses, but this world is not a world independent of scientific experience, but the immediate world surrounding us within which we must act" (p. 226). So "the epistemological problem, having seemingly died of inanition, has been found to be at bottom a problem of method or logic" (*ibid.*).

Prof. B. H. Bode's *Consciousness and Psychology* takes its departure from the difficulties the latter has in defining the former, and advises it to make its 'selective or teleological' character "the fundamental and differentiating trait of conscious behaviour" (p. 240), which gives it "a direction with reference to results that are still in the future" (*ibid.*). From a functional standpoint it becomes evident that the 'simple' sense-qualities of Locke, etc., are not simple but extremely complex and "last results of analysis" (p. 245). *En revanche* there is no ground to accuse perception of 'subjectivity' (p. 246). Throughout "conscious behaviour is essentially experimental" (p. 247), and "all experience is a kind of intelligence, a control of present behaviour with reference to future adjustment" (p. 249). The difficulties of the mind-and-body puzzle are traced to "the prejudice that experience or knowing is a process in which the objects concerned do not participate" (p. 254), whereas "the process of intelligence is something that goes on, not in our minds, but in things; it is not photographic but creative. From the simplest perception to the most ideal aspiration or the wildest hallucination, our human experience is reality engaged in the guidance or control of be-

haviour. Things undergo a change in becoming experienced, but the change consists in a doing, in the assumption of a certain task or duty" (p. 255). This radical insistence on a really biological psychology is followed by a criticism of 'introspective' psychology, which is found to rely on "the distinction between focal and marginal experience," and to reduce "changes in the stimulus to terms of static entities, denominated sensations and images" (p. 274). But this distinction too does not exist *per se*; it is relative to the function of the 'margin' "as a clue or cue to some further experience" (p. 267) and 'introspection' is not properly "a method but a problem; the problem, namely, of interpreting given facts with reference to their function in the control of behaviour" (p. 269). Prof. Bode concludes by urging us to abandon the sterile inquiries "how consciousness can lay hold of passive objects, or how knowledge *überhaupt* is possible," in order to trace "the wondrous activity whereby this plastic dance of circumstance that we call the universe transcends the domain of mechanism and embodies itself in the values of conscious life".

Prof. H. W. Stuart in *The Phases of the Economic Interest* proposes to trace the bearings of the pragmatic notion of "personal growth through exercise of creative or constructive intelligence" (p. 283) upon economic theory. He finds that there is a certain interest in, and desire for, novelties as such, so that the supply of a tempting novelty, *e.g.* of a motor car, may create the demand, and entail a readjustment of a man's economic mode of life. The adoption of a novelty is thus always a personal adventure, not a formally guaranteed deduction from the routine of fixed values. It involves a moral issue because economic 'choice' is really 'constructive comparison'. Thus "real economic progress is ethical in aim and outlook" (p. 352), and the appropriate task of economic theory is not the arrest and thwarting but the steadying and shaping of social change" (p. 353). Prof. Stuart's essay also contains some suggestive remarks on the logic of novelty.

Prof. J. H. Tufts in *The Moral Life and the Construction of Values and Standards* declares that in ethics mere empirical description of what has been is futile while "intuitions and deductions *a priori* are empty" (p. 356). The moral life is "a constant process of forming and reshaping ideals and of bringing these to bear upon conditions of existence" (p. 357), in which four factors are to be emphasised—(1) Life as a biological process involving relation to nature—despite the protest of pessimism (which is held to be directed only against life as painful) and men's willingness to sacrifice life. (2) Life in common, with the social instincts and aims which shape the individual's ends and duties. (3) Intelligence and reason which ruminate upon life as a whole and enlarge it in imagination. (4) The process of judgment and choice which creates the concepts and standard, of

'right' and 'good' and determines the moral self and the objects it values. It is denied that 'right' is merely a means to 'good,' and claimed that it "has a place of its own in the moral consciousness" (p. 382), and is rooted ultimately in social needs. It is denied that the current terms of ethical discussion, like 'reason' and 'passion' are adequately analysed, and that a 'self' is necessarily 'selfish'. "Moral progress involves both the formation of better ideals and the adoption of such ideals as actual standards and guides of life." But they can be constructed "neither by logical deduction nor solely by insight into the nature of things—if by this we mean things as they are" (p. 404). Pure reason cannot "discover a single forward step in the treatment of a social situation or a single new value in the moral ideal". "The moral life is spiritual . . . and spirit is creative" (p. 408).

Dr. H. M. Kallen concludes the volume with an essay on *Value and Existence in Philosophy, Art, and Religion*, which is the only one that aspires to scintillate stylistically. He leads off with the paradox, to which writers on philosophy have given too much colour, that "a profundity is a commonplace formulated in strange or otherwise obscure and unintelligible terms," and exemplifies it by the 'commonplace' that the world was not made for man, though he has contrived to grow up in it. It contains, in consequence, for him a 'problem of evil,' which becomes 'metaphysical' when he contradicts experience by insisting that nevertheless the world shall be thought absolutely good. Why does he so insist? Because nature does not yield him all the values he demands. These values are natural existences, but their *locus* is the mind, not external nature. Human nature *forces* value upon nature and "it follows that Value is in origin and character completely irrational" (p. 413). Values are "compensations in idea" which are substituted for existence (p. 423). Among them are 'the unity of the universe,' its 'spirituality' which mitigates even Evil by humanising it into Devil (p. 420), its 'eternity,' and the postulates of immortality and freedom. Philosophy thus assures us that the real world is 'appearance' and that its own ideas are 'reality,' but it remains reasonable only so long as it does not confound these pure value-forms with existences. Art "converts values into existences, it realises values . . . it creates truth and beauty and goodness" (p. 437). But it remains within experience and "does not claim for its results greater reality than nature's" (*ibid.*). Religion *conserves* values, the values postulated by Philosophy, not as transcending the world of experience, but as continuous with it. It transmutes necessity into providence, sin into salvation, value into existence. Together they substitute for the piecemeal conquest of evil called civilisation, which has no promise of finality (p. 453), an order of hypostatised ideals which involves a flat denial of reality to existence (p. 454). Yet Philosophy, Art, and Religion alike are social facts relative to a context in a changing world (p. 455), but they

are more or less separated from it. This separation goes furthest in Philosophy. "It establishes contact with reality at no individual specific point: its reals are 'real in general'." Hence "it forfeits relevance to everything natural; touching nothing actual it reconstructs nothing actual" (p. 463). Its traditional systems "are works of art, to be contemplated, enjoyed and believed in, but not acted on" (*ibid.*). "Where action is a consequence of a philosophic system" it ceases to be philosophy. Philosophies therefore should abandon all pretence to be true and be content to be beautiful (p. 465). Should they wish to claim truth, they must look forward rather than backward, acknowledge the reality of change and the irreducible pluralism of nature, and must experiment. Such a philosophy can be "believed in, but no longer without risk, for, without becoming a dogma, it still subjects itself to the tests of action. . . . It infuses existence with value, making them one. It is the concrete incarnation of Creative Intelligence" (p. 467).

Thus does Dr. Kallen heroically overcome in the end the dualistic antithesis he set out from, and I cannot but think that he has also himself supplied the refutation of his initial paradox. For though the antithesis of value and existence may be admitted to be commonplace and may perhaps be 'obscure and unintelligible,' it is assuredly neither profound nor convenient. Indeed it may fairly be contended that Dr. Kallen's argument proves its shallowness. He has repeatedly to admit that values turn into existences in various ways and existences into values. It would have been much simpler and easier to have repudiated so misleading an antithesis altogether, and to have shown instead why and how all the 'existences' predicated in any science turn out to be at bottom 'values,' which owe their rank to the fact that the science has seen fit to *prefer their claim* to any alternative known to it. Scientific 'truth,' therefore, is just as much constructed out of value-judgments as philosophic, or religious or artistic truth. And if it is necessary to pander to the prejudice that whatever man touches he defiles by humanising, we cannot help admitting that Science is just as human, 'subjective' and corrupt as Religion, Art and Philosophy. The admission will not in the end hurt any of the four, and may even arouse qualms in some philosophic minds about the wisdom of the attempts to extrude the knower from the scheme of knowledge. Conversely, if we leave ourselves free to recognise that it is an everyday event for a 'value' to realise itself and to come into 'existence,' we shall be much less fascinated by the intellectualistic misinterpretations of the human ideals and activities called Science, Art, Religion, and Philosophy which are traditional, and shall be more ready to perceive that they can attest, not only their 'value,' but also their *truth*, by the functions they fulfil in human life. To any deeper analysis therefore it will seem futile to deny that 'values' and 'facts' are commensurable; the questions it will be profitable to debate will all

concern the *rate* at which the various sorts of value are exchangeable into each other and the weight that should be assigned to each in the various sorts of inquiry.

In general it should be noticed that many of the leading ideas recur in various settings throughout these essays. The reason plainly is that pragmatism is naturally so coherent a philosophy that whoever has grasped its meaning and method is bound to apply it in the same way. I have not therefore myself had any serious difficulty in following and assenting to all the essayists' pragmatic applications, even where they had never occurred to me before. Only for the sake of the weaker brethren one could sometimes have wished for easier reading, with more illustrations and documentation and more precise references, as well as such mechanical aids to comprehension as an 'argument' or a summary. But possibly the difficulty of the book is an intentional reaction against the popularity of James's pragmatic writings, which the man in street found so easy to follow that the true professor always felt it a little *infra dig.* to understand them.

F. C. S. SCHILLER.

The Idea of God in the Light of Recent Philosophy. The Gifford Lectures delivered in the University of Aberdeen in the years 1912 and 1913. By A. SETH PRINGLE-PATTISON, LL.D., D.C.L., Fellow of the British Academy, Professor of Logic and Metaphysics in the University of Edinburgh. Oxford: Clarendon Press, 1917, pp. xvi, 423.

THE first series of these lectures is devoted to breaking down Agnosticism, by demonstrating the intimacy of the human spirit with nature and the universe. Beginning with an attractive account of Hume's *Dialogues Concerning Natural Religion*, the author exhibits at starting the extreme conception of severance between the ultimate power of the universe and the values recognised by man. From this extreme of severance he proceeds to trace throughout nineteenth century thought the growing acknowledgment of man's oneness with the universe. The idea of objective or intrinsic value, he points out, appears decisively in Kant, though unduly limited, and so far as implying a deity, cast in a strangely mechanical mould. Nevertheless "the conception of intrinsic value as the clue to the ultimate nature of reality, is the fundamental contention of all idealistic philosophy since Kant's time" (p. 38).

The concluding pages of the second lecture, which deals with Kant, express concisely and felicitously what is necessary to be said about the objectivity of value and the desire for immortality. "It is well for us all sometimes," the author quotes from George Adam Smith, "to pitch our religious life in terms which do not include the hope of a future." We are not to argue that the uni-

verse was arranged for our satisfaction as given finite personalities. What interests us is rather to know if the real is to be found on the lines of what we experience as greatest and best. The conservation of values is the essential; and I am not sure that the author holds the survival of individuals after death to be necessary to it, though he certainly rejects any dogmatic decision in the opposite sense.

The following lecture (III) depicts the nineteenth century affirmation of value on that side of it which recognises in Lotze's phrase 'a chasm that divides the world of values from the world of forms' (p. 55). Here he discusses Lotze himself, with Lange and Ritschl, and ultimately Herbert Spencer's Unknowable, referring at the end to the hazardous attitude of something like irrationalism suggested in Mr. Balfour's critical treatises and outrageously emphasised in Mr. Kidd's *Social Evolution*.

From this point forward, having stated the antithesis which is his problem, the author pursues a progressive argument, and the three following lectures seem to me the strongest and most instructive in the earlier series. The first of these (IV) is devoted to the present movement in biology, treating it as a liberation of the century from mechanistic ideas. The statement is guarded, much on the lines of Dr. Haldane's well-known researches, and while insisting on the right of biology to use its own conceptions and to recognise the living creature as maintaining its own norms by its individual reactions, it commits itself to no pseudo-spiritual agencies, such as those named entelechies, which are really themselves mechanical. And so the author portrays the nineteenth century as ending face to face with the reality of life, and conscious of fresh interests and new horizons, with 'philosophy girding itself anew for its synthetic task'.

The same plan of argument is carried forward in lecture IV, "The Lower and the Higher Naturalism". For explanations which level downwards the Higher Naturalism substitutes a continuity which does justice to all breaks, and in acknowledging our affinity with the brute creation does not deny the further outlook of the human mind. From this position lecture VI "Man as Organic to the World" goes forward to insist on the naturalness of man's knowledge and valuations, as the direct insight of a being who is no outsider, but is at home, so to speak, in nature and the universe. So that, for example, man's sense-organs are there to make him acquainted with the reality of things and not to cut him off from it. There is no ground for doubting the objectivity either of secondary qualities or of æsthetic properties. "Things are as they reveal themselves in their fulness to the knowing mind" (p. 130). The reality appears truly in its appearances. The opposite view, which involves the epistemological problem, is nothing but a mystification.

He proceeds to compare, as embodying opposite half-truths, two opposite cases of such a mystification. First comes (lecture

VII) the positivist Humanism, a religion whose object is humanity apart from nature; and then (VIII) Herbert Spencer's Unknowable, as the universe apart from human experience. The two, in comparison, are taken as exhibiting the logical and religious defectiveness alike of an appearance which reveals no reality, and of a reality which does not appear. It is noteworthy that while criticising Comte's separation of Humanity from nature the author strongly repudiates the censure that as an object of worship it is in itself abstract. I cannot sympathise with him in this attitude, though, no doubt, it is attractive to-day. The unity of humanity seems to me rather a hope, than a reality such as we have in England or Italy to which the author compares it.

The definite though general conclusion of the first series is stated in the opening pages of lecture IX on "Idealism and Panpsychism". It consists in affirming, against the mystifications of agnosticism, the emptiness of insisting on the mere arcanum of being, and the truth of the revelation which Reality and the immanent God make manifest in appearance. Man is organic to nature, and nature is organic to man. Man is the voice of nature, and nature the basis of man.

The remainder of the ninth lecture and the whole of the tenth are devoted to removing what appear to the author to be misconceptions more or less akin to his doctrine. Panpsychism seems to him to deprive externality of its necessary place in the universe, and as an attempt to derive the reign of law from absolute contingency (see p. 185 on Mr. Peirce's view) to mean "evolving out of pure chaos the very conditions of evolution itself". He seems to me to be right.

The last lecture of the first series (X) is devoted to a disclaimer of Mentalism, as a doctrine akin to Berkeley's, and distinct from the argument which the author maintains, that a *res completa* implies a mind at its centre. I accept the distinction, and surrender subjective idealism to the author's censure. But two reservations on his argument appear to me necessary.

First, in rejecting Mentalism one should beware, I think, of abandoning the distinction which alone made it possible to include a sound Realism in our views, if I rightly understood the author's reasoning. Let me put together two instructive passages from the lectures. On p. 132, summarising the main argument of the earlier series, the author speaks thus. "The whole conception of reality as meaning *existence apart from being known*,¹ and the accompanying theory of truth as lying in the correspondence of knowledge with what is by definition unknowable²—this whole conception, with the agnosticism inherent in its very statement, is swept away by the view which I have been urging. That view abolishes the thing-in-itself in the Kantian sense; or if the term is

¹ My italics.

² This of course the realist would not admit. I presume it to be the author's deduction from the conception of reality just mentioned.

retained, it teaches that the reality of the thing is not *the thing apart from knowledge*¹ but the thing conceived as completely known, the thing as it would appear in its complete setting to a perfect intelligence. Mind is thus no more condemned, as it were, to circle round the circumference of the real world, put off with outside shows, and unable to penetrate to its essential core. Mind is set in the heart of the world; it is itself the centre in which the essential nature of the whole reveals itself." On p. 192, in this tenth lecture, while arguing, in general agreement with Prof. Perry, that Berkeley's reasoning is circular, he says "But that (the centrality of the ego) of itself decides nothing as to *the existence of things before or after they were known and entirely apart from their being known*".² Now I think with Avenarius, that if we are to be faithful to a view like that of p. 192, to which I certainly adhere, we must not, with realists, whether new lights or old, raise the question of existence apart from knowledge. If we do, we break up our synthesis of reality, restore the chasm between knowledge and existence, and with it the whole epistemological mystification which we claimed to have set aside. But I note that on p. 200 as on p. 192 the author seems to weaken about this. His own and Prof. Laurie's reasoning (p. 123) that a universe without mind is not a *res completa*, now seems to him less cogent than the argument from our habit of valuation, and even this latter perhaps to be impeachable as circular in its proof. His point is now rather the defect of bare cognition as against emotional valuation. Here, it seems to me, we recede a little from the position of lecture III and lecture VII.

And secondly I hold it to be a historical mistake to accuse Green of Mentalism in the Berkeleyan sense. I believe the truth to be that Green's work was so thoroughly done, that James and others who entered into his labours forgot that it was he who had done it, placing them in possession of the determinate sense-perception as the primary datum. And they accused him, as the author accuses him, of the error which he mentioned only to confute. I cannot argue the point at length. And it is here only a side-issue.

What the author desires so far to establish is that (he quotes from Kapila) "All external things were formed that the soul might know itself and be free".

Proceeding then from the position that in appearances we have true experience of the universe and God, the second series of lectures approaches the problem of their interrelation. First (lecture XI) it is pointed out that the conception of immanence is stultified if value and reality have no degrees. Hence we have to consider the criterion (lecture XII). On p. 223, in the preceding lecture, it was laid down that judgments of value are self-affirmations of the systematic structure of reality (I abbreviate the phrase) and by no means detached intuitions of this or that faculty. I was therefore

¹ My italics.

² *Ibid.*

disappointed to find in the discussion of the criterion that when we come to give its proper name—the name of non-contradiction—to the spirit of systematic reality, and to trace it through the manifestations in which alone it can be understood or exist, the argument is received with suspicion, and stress is rather laid on the emotional appeal of these manifestations themselves. So that the great principle which for some of us so profoundly links together Republic 585 and the early chapters of St. John's gospel, has its connexion cut, and our mode of conjoining value and reality is almost thrown back to that which we rejected in lecture III. Not that the appeal to emotion is unmeaning, but that it derives its cogency from the sense of fulness and satisfaction which is easily seen to rest on a quality of unfaillingness in the object which satisfies—and this is the quality which links reality to value. Most satisfactions are but little satisfactory, and none that are finite are so wholly. It is to ensure that we approve them on the true ground, and not to dispense with appreciative experience, that attention has been called by name to "satisfactoriness" in its essence.

Thus in developing the conception of value from the middle term of satisfaction, the author goes forward rather to conation under the name of teleology (lecture XVII) than to fruition as transcending conation; and, not insisting at the moment on the clue derivable from æsthetic experience, maintains the inseparability of value from "the idea of purpose and realisation" (p. 335). I do not think that the *prima facie* incompatibility between fruition and the psychologist's conation, which has its "end" rather by satiation than by satisfaction, receives sufficient weight. I do not doubt that the two aspects must be brought together. But I think that the modification of the straining ethical temper must be deeper than the author appears to feel necessary.

Whatever the modification may be, we may agree with him that at its highest teleology¹ passes into value; that in some sense the unity of the world of time may be described as the eternal purpose of God (p. 340); and that in some characteristic akin to this unity we may seek the clue to that transcendence of time which we call eternity (lecture XVIII). The quotation from Prof. Taylor on p. 360 shows the constructive aspect of such a conception; that from Prof. McGilvary on pp. 363-364 shows the paradox which results when it is pushed to the bitter end. We are bound, I think, to suppose, with the author, that an inclusive experience, other than a repetition of particulars, is possible. If not, all completion must imply a loss.

In pursuing the connexion between value and teleology, I have passed over lectures XIII to XVI inclusive, all of which deal, in effect, with the finite individual in his relation to the perfect being. I may observe in passing that the author seems to recognise no distinction between God and the Absolute,² and is therefore, I

¹ Prof. Burnet even tells us that the word implies perfection and not end at all (τέλειος not τέλος).

² He discusses Canon Rashdall's view.

think, obliged to treat as ultimate characteristics which rather belong to the special provinces of morality and religion. God, for religion, must take a side, and perhaps be a 'person'; the Absolute cannot be a part within itself.

Still, what the author requires for the finite individual is definite and considered. He is resolute that a self must have freedom and a certain independent status. He is opposed to any hint of ultimate unreality in the self as we know it, to regarding it as a character rather than as a member of the universe,¹ and to suggestions that its being is likely to be transitory. He feels, I think, that the value of soul-making is endangered if souls are continually to be remade. Perhaps a precisely opposite view on this point is tenable. But as I have said he does not commit himself to personal survival as indispensable to the conservation of values.

On the other hand, while accepting for the self the Aristotelian idea of *πρώτη οὐσία*, he repudiates "the old metaphysic of substance" (p. 290, cf. 272). He intends to guard his doctrine against any independence that would break up man's unity in and with the divine spirit, emphasising his position by criticism of Dr. Howison and Dr. McTaggart. To reduce the spirit-world to a republic of related selves seems to him a nineteenth century caprice.

He is determined that man shall not be regarded as a being to whom God is merely transcendent, but no less so, that his will shall not be a mere conduit—he often insists on such metaphors—for the divine volition. Obviously, I think, his view is on a razor-edge balance; but he is finally influenced rather by ethical and conative than by religious and æsthetic experience. He goes so far towards independence, if I read him right, as to deny that in me the good or divine and the erring or human will can both of them be *my* will "in a single personality" (p. 288), yet if not, what becomes of immanence? In interpreting creation as offering the necessary counterpart to the life of God he thinks more of the finite world of spirits than of the qualities which must be realised in a perfect experience such as "beauty and delight". Love, as a personal relation, he strongly emphasises. Thus, in regard to qualities like the two former, his tone is other than, for example, Mr. Bradley's. He keeps the individual selves more ultimately separate, and in a special note (p. 296) rejects the present writer's use of the social analogy to elucidate the unity of different persons. It might be observed upon this note that you may give the name of heightened individuality to the enlarged experience of the self in the social life, but none the less as an actual feeling and attitude it is the polar opposite of what we mean by the primary awareness

¹ He censures the present writer's rejection of the term "membership" as applied to the self in the universe. It was due just to that shrinking from the "old metaphysic of substance" which he himself expresses. The acceptance of the term seemed to pledge one to the eternal self-existent differentiations, which as demanding pre-existence, and in view of grades of mentality (including those of brutes), cause so much difficulty.

of limits in which the separate self is realised. I think there is some source of error in the author's connexion of time and space with individuation. And if one inquired what and where the finite self really is, the repugnance to blending might seem less reasonable, and the moral of love might be other.

The two concluding lectures insist on the author's view of progress in the universe, and of pluralism and the problem of evil, through criticism of Bergson, James, and Dr. McTaggart, and in dealing with happiness and omnipotence, of Hume and Mill.

The criticism of Bergson's treatment of the future as contingent appears to me highly successful. "To regard the future in this inorganic fashion, as something entirely new, in which anything may happen, is to desert the principle which has already been acknowledged in the relation of past and present" (p. 377). And other criticisms seem no less valuable.

It is inconceivable to the author that growth or novelty should belong to the universe as such; and here again his argument seems highly successful (p. 381) "whatever qualities it (the existent universe) may exhibit, must be due to its own inherent constitution". You can have novelty in parts, because it can spring from a source in the whole; but novelty of the whole has nothing to spring from. The problem is due, I should add, to not having grasped the nature of synthetic necessity. I believe a false disjunction "either analytic or pure novelty" is operative in it. In fact, every syllogism and every proposition is synthetic. The point was well anticipated earlier in the book (p. 155). "The novelty is due, surely, to the inexhaustible nature of the fountain from which we draw, not to any inconceivable birth of something out of nothing."

For the author the life of God is an eternal deed, the perpetual redemption of the finite world which is not external to him. "The divine life is in short the concrete fact of this inter-communion."¹ The divine omnipotence is simply the power of love to overcome all evil. And we understand that while God is certainly not finite he participates, through his immanence, in the effort and suffering of the creature. We can only understand evil, if we take seriously the freedom of the finite world. It looks too bad to be possible. We should not have made it so. But then we should have had nothing great. It is akin to what Hegel says in the famous passage about the *Täuschung* (p. 412). Here I find the author's criticism unappreciative. I think he does not like paradoxes; but they are often illuminating. What Hegel is affirming, surely, is the essence of justification by faith. What obstructs you is but an illusion; believe, and it is gone. The bald simplicity of the requirement along with its huge impossibility for the natural man, is surely the fundamental paradox of religion. The eternal deed cannot wait upon you to do it, for you, as you, are powerless

¹ Canon Rashdall's and Prof. James Ward's positions are discussed in lecture XX.

to do it. But if you have faith as a grain of mustard seed, you become a co-worker all the same, both practically and in heart and mind.

As I have suggested that the author insists too much on the ethical and independent side of the self, I am bound to point out the passage (p. 396) where in criticising James he clearly exposes the weakness of the moralistic attitude made absolute, and assents to Mr. Bradley's saying that to take it so "is to have broken with every considerable religion".

The central purport of the book is well emphasised in a footnote (p. 409 n.) which he calls attention to Dr. Streeter's remark that "so far as the imagination of the Church is concerned [as contrasted with the creeds] it is the Arian who has triumphed". While retaining theism, to undo that Arian imagination of the Trinity which in the general mind evades the implications of the Incarnation, is what the author has had at heart.¹ It is theism thus modified which alone seems to him worth fighting for, and it depends upon being in bitter earnest alike with immanence and with the freedom of the finite world. The author is by temperament, I should imagine, balanced and a little reserved. He dislikes extravagances and forcing arguments, and abandons others when he sees this in them. Thus he breaks away from Hegel, say, or from Mr. Bradley, at points where in my judgment they have seen important truths. Nevertheless, his statement, taken as a whole, is central, so to speak, and puts before the reader concisely and lucidly a doctrine at once sane, and suited to our time. It marks, I hope, a gain of ground which, to use a current phrase, has been consolidated, and will not be abandoned.

BERNARD BOSANQUET.

The Theory of Beauty. By E. F. CARRITT. Methuen & Co.
Pp. 304.

THIS is one of the most useful and comprehensive books on the Philosophy of Beauty which have appeared recently in the English press. It is characterised by sincerity of style and sanity of judgment, and reveals a wide knowledge of pictorial art and literary criticism as well as of the history of æsthetic theory, all admirably used for the purpose in view. The greater part of the book is occupied with a discussion of the chief historic theories of beauty. The most important part of the book, however, is the very able critical exposition of Croce's Expressionist Theory. "I believe," says Mr. Carritt, "that a greater amount of truth is contained in Croce's *Estetica* than in any other philosophy of beauty I have read. But its method, both in theory and history, is too brilliantly cursory to be conciliating."

¹ It is only just, I think, to recall at this point, M. Arnold's 'Fairytale of the three Lord Shaftesburys,' which did, surely, much of what the author desires.

This book certainly makes Croce's view more intelligible, and as modified by Mr. Carritt, much more reasonable. Mr. Carritt's criticism of Croce, however, applies perhaps in some measure to his own work—it is “too brilliantly discursive to be conciliating”. Indeed Mr. Carritt modestly disclaims any pretence at finality. “I do not pretend,” he says, “to have reached a solution satisfactory even to myself.”

The comments upon the historic theories are generally full of insight, and the author shows great skill in leading from them to his own view. Yet it is this approach of the subject from so many different points of view which tends towards some discursiveness of treatment, and it is to be hoped that in the next edition of his book Mr. Carritt will extend the exposition of his own theory, even if it involves a reduction of the historical portions.

The main criticism which I am inclined to make upon the book is that it is lacking in thoroughness of psychological analysis of the æsthetic experience. Mr. Carritt has apparently ignored the literature of the psychology of æsthetics, with the exception of Lipps and his theory of *Einfühlung*. Thus, in the very extensive list of authors quoted (the names of authors and artists referred to number over two hundred) we find not a single mention of H. R. Marshall, Lalo, Fechner, Bullough, Puffer, Martin or Müller-Freienfels. I am aware that some æstheticians would say that psychological analysis of the æsthetic experience is irrelevant, contending that we have only to examine the objects which men regard as beautiful to discover the essential characteristics of beauty. Indeed Mr. Carritt himself says at the outset that the object of æsthetics is “to discover what the common quality or relation to ourselves may be in all those things which we call beautiful”. It is unnecessary to press the fact that we must first decide who is to select the objects; for, at the crucial points, Mr. Carritt falls back upon the nature of the æsthetic experience. Thus the moral theories of beauty are dismissed because they do not describe our æsthetic experience. “I have tried,” says Mr. Carritt, “to criticise various theories in respect of their harmony with those facts of æsthetic consciousness which it was their business to explain. I have hoped to show that divergent systems are all intelligible attempts to state the same experience.” It may reasonably be asked “how can we be sure it is the ‘same experience’ without first careful introspective analysis on the part of the experiencer and a full description afterwards”? The mere saying “I regard these objects as beautiful” is inadequate; there is no proof that the experiences are always the same. Indeed in his treatment of the sublime Mr. Carritt shows that the nature of his own experience of the sublime differs fundamentally from that of Mr. A. C. Bradley. Why should not equally important differences be discovered, on sufficient enquiry, in reference to the experience of a beautiful object other than sublime, so that, as is

indeed a matter of common experience, a thing may be beautiful for one person and not beautiful for another, without either being lacking in general æsthetic sensibility or training? I suppose that Mr. Carritt would admit this. In reference to the sublime he says, "It is obvious and irrelevant that what in ordinary language would be called the same object may at the same time appear sublime and not sublime to equally good judges".

Now if the same thing may appear beautiful to some persons and not beautiful to other "equally good judges" it seems hopeless to approach the problem of æsthetics otherwise than from the point of view of the psychological experience involved. Indeed, other passages show that Mr. Carritt holds that it is the *attitude* that counts, and that he would say of the beautiful and the ugly what he quotes Wordsworth as saying of the beautiful and the sublime, "Our business is not so much with the objects as with the law under which they are contemplated". His emphasis upon this is shown again in his statement that "art and nature are really in essentials one and the same thing, since both need the appreciative activity". And that it is the attitude and not the object with which we are concerned is still more clearly shown in the following passage: "It is not the written or spoken poem nor the perceived atmospheric conditions which must strictly be called beautiful, but only a particular way in which at a given moment any individual expresses himself in them".

This subjective approach then really seems to be Mr. Carritt's view of the method of æsthetics. Yet elsewhere he says, "We could only understand beauty by examining what we actually make or find beautiful". It is very doubtful whether this is consistent with ultimate dependence on the experience: and the inconsistency is still more striking when Mr. Carritt says (p. 127), "Beauty is a gift of the spirit for which *all things* are possible objects". I am not opposing this particular doctrine. Personally I should agree that the æsthetic attitude may be adopted, though sometimes only by deliberate volition, towards the *prima facie* most uninteresting things (*vide* R. L. Stevenson's essay "On the Enjoyment of Unpleasant Places"). The point is that, if this is the case, the ultimate thing for examination is the æsthetic experience and not the beautiful object. Of course this would not prevent us from naming subsequently any characteristics of objects which it may be found are *prominent* before the mind when the æsthetic experience is being enjoyed, and thus we may get at a point of view which is in a sense objective.

A second point of fundamental importance is the question of the universality of beauty. Mr. Carritt comments upon the fact that the æsthetic theories of the philosophers have been affected by their own æsthetic feelings, and surely any theorist is exposed to the same danger. If so, do we not require to collate the experiences of many and not to rely too much upon the experience only of others who have written on æsthetics? If that is done,

one is at once impressed by the extraordinary variations in the elements of the æsthetic experience which seem prominent in different individuals. Of course whenever there is an experience which can properly be called the æsthetic experience there must be some characteristic which is common to all such experiences, otherwise the term becomes meaningless. But there is a sense in which, I think, Mr. Carritt appears to be too ready to assume the universality of beauty. He admits variation in taste as we have seen, but there sometimes appears an underlying assumption that, given proper æsthetic education, the same beautiful objects would appeal to all. "By practice . . . of our æsthetic faculty," he says, "we improve upon our first crude apprehensions of beauty." Yet often fuller practice in æsthetic education leads two persons to contradict one another in their æsthetic judgments more flatly than ever. Do the experts differ less than the common people in their pronouncements upon a new book or opera?

There are passages in which Mr. Carritt really seems to agree with the drift of the present argument: and when these are followed up the universality he claims for beauty becomes vague and shadowy. "There must be allowed," he writes, "an infinite number of ways in which our faculties can harmoniously and freely interact, and the same external object might stimulate different interactions. The universality, then, which is claimed by our æsthetic experience does not deny the rightness of a different æsthetic experience in face of the same external object, it only asserts the possibility and goodness of our own experience for every rational imagination." Yet "If it (the beauty of a tulip) is really an expression of something really felt, it is 'true' and universally valid—that is to say, is really an expression: but it might very well happen that nobody else had this vision or these sensations, even in face of the tulip". Apparently then the only universality which we can claim is that "If anyone else could be in exactly our situation, in the same frame of mind, let us say, and confronted with the same physical stimulus, he ought to be able to make this æsthetic experience out of it, or else we have not made all that we might".

The impression one gets indeed is that Mr. Carritt, starting out from philosophical training and especially historical studies with a decided universalist view of beauty, is constrained, by his own natural openness of mind to facts, towards an abandonment of any doctrine of universalism other than this: (I.) that while object X may be beautiful to A and ugly to B (even equally good judges), and A has no right to say that B *ought* to judge it beautiful; (II.) and that while the object X, though beautiful to A and beautiful to C, may give total æsthetic experiences which are very different in their respective cases, yet (III.) there is a common element in the two experiences and that this justifies the name æsthetic experience.

I suppose the most subjectivist æsthetician would not dispute this degree of universality in beauty.

The common element in (III.) above would for Mr. Carritt (and for Croce) be "expression"; only he would apparently say, with Croce, that the *whole* of the æsthetic experience can be adequately described by the term expression, so that the differences between A and C in (II.) above must be non-æsthetic. Now it is precisely in these differences that the richness of varied forms of æsthetic experience may consist, and which it seems to me may be and are revealed by more thorough psychological investigation.

Mr. Carritt breaks with Croce (rightly as it seems to me) on three important points. He includes the beauty of nature under beauty proper, here again falling back upon his own æsthetic experience. "I do not know," he says, "if the gait of children is to be called art or nature, but I trace no difference of kind in my enjoyment as between the most artistic dancing and the paces of a fawn or even the curling of a wave."

(II.) He opposes Croce's identification of intuition and expression. This doctrine the present writer has already touched upon (in the review of Croce's *Æsthetic*, MIND, No. 76, N.S.), but it may be pointed out here that Croce's view may contain this approach to the truth—that any intuition so far as determined by the nature of the object is capable of becoming æsthetic experience. We have to look to subjective conditions to see whether and why the intuitions do become æsthetic.

(III.) He rejects Croce's paradoxical view that there are no degrees of beauty, that there is no expression except perfect expression, and that it is in every case therefore equally expressive or beautiful. The whole of his criticisms of Croce on these three points seem to me sound, and convincing.

"My reading of Croce," writes Mr. Carritt, "has convinced me that the expression of any feeling is beautiful." It is important to notice that he is using "expression" here in Croce's sense—expression by the self to self. He would not hold that the scowl on a murderer's face or on the painting of such a subject—though expressing hatred—*must* be beautiful; only that it may become beautiful and does "if contemplated without practical interest, without scientific abstraction, and without existential judgment as the pure expression of emotion."

This use of expression in the sense of "expression to self" seems to me misleading, except in reference to those cases in which we ourselves, as artists, or in imagination, create the "sensible form" which is essential for the embodiment of our emotion. Even granting that it represents an element always found in the æsthetic experience, it seems to me that the plain words, "I find that expressive (of this or that emotion)" are at least as accurate as, and much less likely to mislead the average reader than, "I express this or that emotion to myself in that". (This is not a quotation but it indicates correctly, I believe, Croce's view of expression, of which Mr. Carritt approves.)

"In the history of æsthetic," concludes Mr. Carritt, "we may discover a growing consensus of emphasis upon the doctrine that all beauty is the expression of what may be generally called emotion, and that all such expression is beautiful." But in this sentence "expression" must surely be read in the more objective sense, *viz.*, that the *artist* has expressed the emotion for us in his work. To the statement that all objects when judged beautiful are in some way expressive, few, I suppose, would now demur. But from this "object" point of view the expressionist school of Croce has, I take it, definitely turned away. Croce's view is, in fact, decidedly a psychological approach to æsthetics. But it is precisely as a psychological account that its incompleteness is most evident. For example, it ignores elements which, even if variable in different arts and different individuals, contribute to the total æsthetic experience, and it omits reference to the essential conditions of attention in the apprehension of the beautiful, which are at least as characteristic of the æsthetic attitude as is expression to self of an emotion.

These comments are, I admit, only prolegomena to a full reply to Mr. Carritt's theory, but I have thought it well to dwell upon the fundamental question of the method and scope of Æsthetics. I feel also that I have failed to do justice to the many excellent discussions of individual questions scattered throughout the book, and particularly to the perspicacity Mr. Carritt has shown in criticising the most disputable and yet very characteristic views of his master Croce.

C. W. VALENTINE.

VII.—NEW BOOKS.

The Philosophy of William James. By TH. FLOURNOY, Professor in the Faculty of Sciences, University of Geneva. Authorised Translation by E. B. HOLT and WILLIAM JAMES, Junior. London: Constable & Co., 1917. Pp. vii, 246.

A SHORT account of the original edition of this book was given by Dr. Schiller in MIND, No. 82, page 279. In the translation its lucidity and charm are still remarkable, and English readers will certainly get the impression which its author wished to give of William James,—of a personality so wide and sympathetic, so full of energy and frankness, as to make his philosophy attractive.

After some introductory chapters noticing certain influences which helped to form James's outlook and mental habits, a sketch is given of the leading ideas reached in the course of his philosophical career. Prof. Flournoy recognises, however, the difficulty of reducing to a system views which, essentially progressive, resented all such trammels. He finds it more suitable to take certain heads—Pragmatism, Radical Empiricism, Pluralism, 'Tychism,' Meliorism and Moralism, Theism, and the Will to Believe—and to give such an account as can be shortly given of James's conception of them. An Appendix contains a long review (which appeared in the *Revue Philosophique* in November, 1902) of "The Varieties of Religious Experience".

The peculiarities of James's style make exact interpretation of his doctrines often difficult, and specially in regard to Pragmatism and the Will to Believe. Prof. Flournoy's account of the former would have been more complete if he had dwelt more on the distinction between a criterion of meaning and a criterion of truth; which distinction some of James's own expressions tend to confuse though we can hardly suppose that he was unaware of its importance. It is this confusion that chiefly explains and almost excuses the violent opposition to Pragmatism that was at first felt by many philosophers; at any rate it helps to explain their doubt whether the need of objective verification was sufficiently recognised by William James.

Among pragmatist doctrines which, unless carefully interpreted, tend to keep this confusion alive, three stand out especially: that the truth of any judgment is to be judged by its consequences; that all truth is 'truth for a purpose'; and that every man's philosophy is dominated by his temperament. The first of these attempts to convey in one statement two distinct tenets—(a) That the truth of a statement cannot even be investigated until its meaning, as indicated by its supposed consequences, is known; and (b) that verification depends on comparing expected consequences with facts experienced. The second is capable of two distinct uses; either (a) for discovering the intended meaning (or absence of meaning) of a given statement which claims to be true, by raising questions about its purpose in application; and (b) for removing the appearance of self-contradiction in admitting that what is true to-day

may be false to-morrow. In this use its effect is to substitute the notion of 'sufficient' truth for that of 'absolute' truth, to recognise the irrelevance of the latter notion in all human inquiries, and to explain the discarding of older 'truths' in favour of newer ones by the novelty of the purpose for which the older truth is insufficient. The instability of truths is then seen to affect them only as used to answer questions not actually before us. Neither in these two doctrines nor in recognising that selection, or choice, is a necessary part of judgment is there anything to weaken our sense of the need of objective verification. So long as we admit that the selection necessarily made in all judgment is made at a risk of error, the personal element in judgment—being present everywhere—is seen to involve the need of constant criticism, whether the judgment be made by *orbis terrarum*, by a few, or by an individual. If ever a right selection can be made, by one person or by millions, 'bias' is shown not to be universally an enemy of truth.

But the main subject of Prof. Flournoy's book is the religious views of William James, as connected with his philosophy, and he seems to have caught the spirit of these with complete success. His account of them is sympathetic and full of interest.

A. S.

A Text-book of Insanity and other Mental Diseases. By CHARLES ARTHUR MERCIER, M.D., F.R.C.P., F.R.C.S. London: George Allen & Unwin, Ltd., 1914. Pp. xx, 348.

Twenty-five years ago (*MIND*, XV., O.S., p. 551), I had the pleasure of reviewing Dr. Mercier's *Sanity and Insanity*. The fundamental concept of that book was that insanity is not mere unsoundness of mind, but disorder of conduct—"a disorder of the adjustment of self to surroundings". In the chaos of text-book materials the correlating power of the concept was manifest. Ever since those days my concern with insanity has been purely speculative. But I have followed in some detail Dr. Mercier's elaborations in his *Psychology, Normal and Morbid, and Conduct and its Disorders*. Curiously, I had not read the first edition of his Text-book; but my omission has this advantage, that the second edition now comes to me with the pleasure of novelty. And the pleasure is genuine; for this *Text-book of Insanity and other Mental Diseases* is a coherent application of fundamental principles to the organisation of practical study. The student that begins insanity under guidance of this book will not readily lose his way; for, in the wealth of material showered on him in the asylums, he will keep applying the fundamental ideas here so lucidly put—"the four-fold disorder of conduct, mind, metabolism and brain-process" (p. 118). If he chooses to think in pigeon-holes he will certainly find Dr. Mercier's study-diagrams as fascinating in practice as in theory. But what strikes me as the best practical point in the book is the bold triple classification by forms of insanity (insanity the symptom), by types of insanity, and by kinds of insanity (insanity the disease). Here one sees the advantage of logical canons of classification. "It is the endeavour to combine the form, the type and the kind, variety, or disease of insanity in a single scheme, and to divide insanity simultaneously on all three principles, that has vitiated and rendered invalid every previous scheme of classification; but though the three principles cannot be used simultaneously for the purpose of classifying insanity, this is no reason why each disease or variety should not have its own form or forms, and should not be of one or other type. Some varieties, such as paranoia, are of the same form and the same type

throughout, and never vary in these respects. General paralysis, on the other hand, may begin as an acute insanity, or may begin gradually and insidiously. Its form may be euphoric and exalted, or dysphoric and abased, or merely confused and amnemonic, and, subsequently, its type becomes chronic and its form anoiac. In every case, the form is easy to observe, the type may be readily ascertained, but the variety may be long in doubt; the reason being that the form and type are chiefly to be ascertained by observation, while the variety rests upon induction, the data for which are not always to be had" (p. 221). It is no more to be expected that this severely logical classification will prevail among practical alienists than that the principles of a logical biology should prevail among practical physicians or surgeons; but the classifications are none the less of the highest teaching value. "The very important distinctions between the various defects of memory have never been described before" (preface). This claim I am not able to confirm or question; but the pages dealing with memory certainly deserve study. It is a great satisfaction to have run rapidly through the beautifully printed pages of this volume, which I did without first looking for an index. I can, therefore, enjoy all the more Dr. Mercier's apologia for his index-substitute. But it would be interesting psychologically to know what he really thought proleptically of his critics when he was constructing the indexes to the other three books named above, and whether he thought the books were not "logically arranged" (p. 348).

W. L. M.

The Problem of Personality. By E. N. MERRINGTON. Macmillan & Co., 1916. Pp. viii, 229.

This little work, as the 'Foreword' tells us, was originally designed as a thesis for the Harvard Ph.D., and it may be said at once that it fully merited the bestowal of that degree. Whether it makes any real independent contribution to the topic with which it deals is not so clear. Of the two parts—the expository and critical and the constructive—of which the book is composed, the former will, I think, be read with the greater profit, inasmuch as the criticisms of well known thinkers like James, Bradley (who by the way is hardly treated with the courtesy which it becomes a young writer to show to a veteran philosopher), Royce, Rashdall and others are necessarily made fairly precise in their drift by the quotations upon which they are founded. The constructive part, devoted to a defence of the reality of personality, both human and divine, has been found by one reader at least hard to follow. The author has an ungrounded dislike of definitions, which he mistakes for attempts to silence criticism by an exercise of arbitrary caprice. He forgets that, after all, a writer in defining his terms is only attempting to make it quite clear to his readers—and to himself—what he means and what he does not mean by his statements. Mr. Merrington's own "constructive" chapters turn wholly on the question what is meant by the constantly recurring words "experience" and "personality," but the present reviewer is so far from knowing what Mr. Merrington means by these words that he feels incompetent to say whether Mr. Merrington's doctrine is either new or true. Thus when Mr. Merrington decides that God is a Person, I am not sure (a) whether what he means by this is from the point of view of Christian theology, orthodox or merely heretical, nor (b) whether it differs much from what Mr. Bradley, of whom Mr. Merrington has so poor an opinion, might also have said.

I think I might have been more able to answer both questions if the author had told me what exactly he means by a person and, above all, what he means by experience. I suspect what he is really concerned to maintain is something to which I should largely agree with him, but his prejudice against "concepts" and definitions makes it very hard to be sure.

As a general remark I may perhaps be allowed to say that I feel too much is made nowadays of the words Person and Personality as ascribed to God. It is, at least significant, that throughout the whole formative period of historical Christian theology it never seems to have occurred to the minds of the great theologians that the "personality of God" was a tenet of the faith. The proof of this is simple: one has only to try to render the statement "God is a person" in the Greek of the early Fathers or the Latin of the Great Western Doctors or of St. Thomas to find that there are no words to the purpose in the vocabulary of either Greek or Latin Christianity. *οὐσία, ὑπόστασις, πρόσωπον, essentia, substantia, persona*, not one of them will give the sense which appears to be intended when a modern writer speaks of a "personal God". And this seems to suggest that perhaps we ourselves do not really know exactly what we mean when we use the phrase. Until we do know, it seems rash to regard the "Personality of God" as a fundamental truth. Of course if all that is meant is that we shall be less out if we imagine God as a wise and good man then if we think of Him as a "force" like gravity, or a "stream of tendency"—whatever that may mean—most of the philosophers who come under Mr. Merrington's lash, if not all of them, would probably admit this. But if the proposition is put forward as conveying important knowledge about God "as He is in Himself," I feel inclined to respond with the familiar doctrine of the schools that *non possumus in hac vita videre Deum per essentiam*. At most the proposition must mean simply that I stand to God in relations in which I can stand only to persons. But when I ask myself what relations can I sustain only towards persons, I find myself thrown back in attempting an answer on just that juridical sense of the word "person" which Mr. Merrington regards as insignificant.

A. E. T.

The Fundamentals of Psychology. By W. B. PILLSBURY. New York: The Macmillan Co., 1916. Pp. vii, 562. 8s. 6d. net.

The distinctive feature of Prof. Pillsbury's text-book is its theoretic impartiality. All notable points of view are indicated, so that the exposition represents fairly the state of the psychological mind of the present time in general. Such a book may be a welcome counterpart to any teaching that is directed mainly towards some special point of view. The text is clearly and lightly written.

The plan followed is much the same as that of the author's *Essentials of Psychology*, which contained 362 pages. The treatment of the nervous system has grown from 44 to 83 pages, that of the sensations from 44 to 118 pages. In the latter physiological matter preponderates.

A few points from this part may be noted by way of criticism. "The tritone, the fourth, and the fifth, the accepted intervals of the Greeks, have gradually given way to the thirds and sixths, and now we see seconds and sevenths admitted to music under certain circumstances" (p. 159); this probably refers to the classification of the *octave*, fifth, and fourth as consonances by the Greeks and to the later, and our, inclusion of the thirds and sixths in the same class. The statement

that "beats seem to be carried by neither of the tones themselves, but by a tone intermediate between the tones that produce the beats" seems to assert too definite and special a reference for beats. "If one will hold down a key [of the piano] and sing, the corresponding note will be distinctly heard to respond in sympathetic vibration;" any key? One would like to know exactly where Helmholtz in his completed theory suggested that "the vibration of the [basilar] fibres was dampened by the tectorial membrane, which was assumed to drop down upon them [?] when the sound ceased" (p. 165). "From this it seems that the essential organs in the appreciation of movement are the muscles and tendons with the sensory nerve ends that are embedded in them. These results have been confirmed by v. Frey" (p. 199). But, in the paper referred to by Pillsbury, v. Frey summarised his own conclusion thus: "Durch die oben beschriebenen versuche scheint mir der Beweis erbracht, dass es eine Wahrnehmung der Muskelspannungen, ganz unabhängig von irgendwelchem Bewegungserfolge, gibt und dass sie auch bei der Beurteilung von Bewegungshindernissen (gehobenen Gewichten) eine massgebende Rolle spielt, Hand in Hand mit der Wahrnehmung des Bewegungserfolges. *Es wird die Aufgabe weiterer versuche sein, zu ermitteln, auf welchem Wege die Kenntnis des letzteren gewonnen wird.*" v. Frey's theory refers, as the title of his paper says, to the Kraftsinn—the sense of weight—and not to the sense of angular movement, to which Pillsbury's paragraph refers, and still less to the sense of angular position which is there thrown into the bargain ("it is important to know where the different members of the body are at any moment"). The absence of sense-organs on the contiguous surfaces of joints and the inhibitory and distracting effects of induction currents do not imply that the senses of strain or weight and of angular position (and movement) are the same or depend on the same sensory receptors.

HENRY J. WATT.

Organic to Human: Psychological and Sociological. By HENRY MAUDSLEY, M.D. Macmillan & Co., Ltd., 1916. Pp. viii, 386.

"Disillusioned old age," says Dr. Maudsley, "albeit failing energy unfits it for prompt decision and vigorous execution, has a set-off of some value in its store of experience, in its aloofness from affairs, in a cool judgment of them unbiassed by personal interest." Dr. Maudsley need not apologise for these exercises undertaken to "occupy the time and ease the burden of the dreary decline from three to fourscore years". They are the most interesting form of auto-biography. For my part, I like to see what the warm creed of youth comes to when the habit of action makes all creeds superfluous and the illusional purpose that was the future is now an accepted cause in the past. It is pleasing to have, as we have here, a calm survey of the ideas that filled and fill a life and to have them set forth in a soft continuity of narrative that reads like a twice-told tale. Yet it is argument all the time. It is not a book to summarise or discuss; it is one to take up on occasion when one tires of academic metaphysics and wishes to see the panorama of ideas that have sustained a life spent in the practical direction of the human mind within the conditions of life as it has been lived in the last sixty years. No one man has done more than Dr. Maudsley to keep the general idea current in the infinite detail of alienism. His present volume shows us the larger relations that interest himself, now that leisured age leaves him free to think detachedly. The psychologist and sociologist will find much worth reading in this account of mental organisation, reproductive considerations,

consciousness and continuity, science and social advance, conditions of civilisation, the microbe and man, education and socialisation, etc. The point of view is indicated thus: "By adaptive working experience and its consequent physical structuralisation in the brain—the literal instruction or information, that is, of cerebral plexuses of structure and function—were the incorporation of memories and the required skill gained; without such fitly organised plexuses the mental function which they embody and discharge never was, nor is, nor probably ever shall be performed on earth" (p. 6). Consciousness is an epi-phenomenon, or dependent phenomenon, which, on the dissolution of the physical structure, "vanishes into nothingness or the void" (p. 6). "To make reason the full-blown attribute or faculty of a separate mental entity is to overlook the entire process of its gradual formation and growing function in every mental organisation" (p. 7). But these are only points of view: the essays are really a tolerant criticism and estimate of the leading social ideas and motives and movements of to-day, in a setting of informed biology, psychology and ethics.

W. L. M.

Études de Philosophie Morale. By C. WERNER. Geneva and Paris, 1917. Pp. vii, 248.

Prof. Werner,—already known to some of us as the author of a brilliant work on *Aristotle and the Platonic Philosophy*,—has collected under this title a number of essays and addresses all concerned with the borderland between ethics and religion. The author's standpoint is in general that of Hegelianism,—perhaps one might say more precisely Hegelianism of the "right Centre". The views he expresses, and the fervour of his devotion to the spiritual values of life, must naturally remind an English reader of the kindred utterances of T. H. Green and the Cairds. If I may hint a criticism, I should be inclined to say that Prof. Werner's weak point is also the weak point of the thinkers I have just mentioned,—inability to appreciate the value for religion of the attachment of its concepts and emotions to a definite historical personality and a definite historical community. I doubt whether he has ever asked himself, any more than most 'liberal' theologians have, the question whether any faith that is to exercise a real and lasting control over men's actions is not bound to be an "institutional" religion with a real historical person as its centre. I think I detect in him, for instance, some traces of the tendency to disparage not this or that 'creed,' because its propositions are false, but all creeds as such, because their statements are definite. Common as this tendency is, it is surely simply foolish. That a given proposition is actually or probably false is a good reason for refusing to believe that proposition, but if it is desirable to believe anything at all in religion, it must be right that our beliefs should be definite. Mere vagueness can hardly be more of a merit in religion than mere want of outline in art, or ambiguity of formulation in science. The style and tone of Prof. Werner's essays is charming except perhaps in the last of them all, that on the value in religion of Renouvier's neo-criticism, in which there is more than a touch of acerbity.

A. E. T.

Le Qualita del Mondo Fisico. By ENZO BONAVENTURA. Firenze : Galletti & Cocci, 1916. Pp. 306.

This volume is an important contribution to the philosophy of nature. It sets out from the problem whether the differences observable in sensory qualities spring from qualitative differences in the external agents, or whether they represent only the way in which external agents, really homogeneous, appear to the conscious subject ; and, if the latter is true, under what conditions the homogeneous agents give the different sense qualities. In pursuit of a solution, Bonaventura goes over the various physical, chemical, physiological and psychological theories, since Galileo, which have attempted to unify or explain the differences in the world of sense-perception. The work is valuable not only for its masterly summary of scientific research, but also for its remarkably clear arrangement, its methodical progression, the distinction and smoothness of its style. The general conclusion to which it tends is that the mechanical theory is bankrupt, and that some sort of spiritualistic interpretation of the physical and physiological facts is necessary, but there is no shirking of the issues, and the conclusion is built on a purely scientific analysis of the facts, and a philosophical criticism of the concepts of matter, force, energy and others.

The Introduction distinguishes "quality" as the *given* in our experience, from "quantity" as the relative, comparative, measurable aspect, and argues with regard to the general nature of the former, that it is impossible to get beyond a dualism between the percipient subject on the one hand, and the perceived qualities on the other, the acts of the former—seeing, hearing, etc.—being quite distinct both in existence and in nature, from the different qualities of colour, sound, etc. It is shown to be impossible also for science to limit itself to pure description (Duhem, etc.), without explanation or hypothesis, since all statements of connexion, dependence, etc., go beyond the data of experience, and are in fact hypothesis. Hence the appeal is necessary, first to scientific explanation, but ultimately to metaphysical interpretation.

The three main parts of the book deal with the physical, the chemical and the physiological theories respectively, the first occupying half of the whole work (pp. 27 to 168). Bonaventura shows that with the moderns there are two kinds of mechanistic theory, the one emphasising the formal or mathematical, the other the real or physical aspect. The former does not attempt to penetrate to the nature of reality, it assumes that the mechanical processes are the intelligible, but not necessarily the *only* part of the phenomena. With the latter, atomism leads up to some theory of the nature of reality, as the doctrine of the continuity of matter in Descartes, or the corpuscular hypothesis in later physics (p. 51). It is mainly with the second group that the author deals, showing by a discussion of all the principal theories of matter and movement, in their relation to perception, that none has succeeded in explaining the origin of differences of quality, that as soon as they descend from abstract principles to concrete facts, they surreptitiously introduce concepts that are in contradiction with their fundamental assumptions. In the same way in Section 3, on Force, the attempts to reduce force to movement (Lagrange, Hertz, etc.), and to eliminate action at a distance on mechanical principles, are shown to have failed. A similar conclusion is brought out in regard to the forms of energy (Section 4), establishing that heat, light, electricity and chemical affinity are irreducible one to another, that so far from all the phenomena of nature being mechanical, the contrary is true, that no natural phenomenon is a purely mechanical one. In

Section 5, the attempts to transcribe the data of perception—form, volume, weight, etc.—into terms of energy, and Ostwald's theory of energy as a sort of "thing in itself," or substance, are criticised, and it is argued that energy is a pure quantity, and belongs entirely to the domain of mathematics.

Part II., on chemical theories, follows the same historical and critical lines as Part I. for the physical theories. The four sections deal with the elements (Dalton and the law of periodicity), the compounds, states of matter—gases, fluids and solids—and dynamistic hypotheses respectively. The net result is that there is no primitive homogeneity of matter, that there are qualitative differences between molecules of organic and of inorganic compounds, and between the molecules of the various compounds within each series, and that the discoveries of radio-activity have done away with two of the fundamental concepts of the classical chemistry, those of the passivity of matter, and the irreducibility of the elements. Matter is undergoing an evolution, not only in its biological, but even in its most purely "physical" forms. The transformation of elements is possible, although it appears to be limited within certain groups (p. 230), so that the various properties of substances are the expression of chemical individuality, parallel to biological and mental individuality.

Part III., on physiological theories, deals mainly with the doctrine of specific nerve energies, in its bearing on the problem of qualities. A useful restatement of Johannes Mueller's work is given, its support by the neuron-theory, and Helmholtz's and others' extension of the specific energy doctrine to the different qualities within a given sense, as well as the different "modalities" or major differences between sight and hearing, taste and smell, etc. Section 2 deals with criticisms and restatements of the theory, and Section 3 with the radically opposed principle of *functional indifference* (Lewes, Wundt, etc.), and of the parallel evolution of the nervous system on the one side, the discrimination of sense-qualities on the other. This also is shown to be inadequate, especially in its implied derivation of a sensibility from the primitive type of touch.

In conclusion, it is argued that even when physiology shall have given a precise explanation of the way in which the senses carry out their function, it will not account for the origin of the sensory qualities. The true specific energies are the different ways in which the activity of the sentient subject expresses the differences of nature in its own gradual evolution. Sensory qualities "are not an external product of the reciprocal action of material elements, but are the representations which a conscious subject has of these actions" (p. 305). The conscious subject has its own appropriate form of activity, its conscious unity, its negation of extension; such a being is by definition spiritual, so that the study of sensation and perception alone, apart from higher activities, certifies the reality of the spiritual individual (p. 306). And the sum of the whole work is that modern science is itself leading to the hypothesis of "individualistic spiritualism" as that which is most firmly based upon our present scientific results, and at the same time that which more than any other satisfies the needs of our thought.

For the student of philosophy or psychology the work may be strongly commended as an admirable sketch of the progressive evolution of scientific theory (in which British writers have ample justice), and as a formidable criticism of the "mechanism" with which so much of that theory is imbued.

J. L. McINTYRE.

Il Fondamento Morale della Politica secondo Kant. By E. P. LAMANNA.
Florence, 1916. Pp. 135.

L'Amoralismo Politico. By E. P. LAMANNA. Florence, 1916. Pp. 39.

Two admirable essays on the impossibility of constructing a theory of politics on any but an ethical basis. The longer and first-mentioned is a very careful and candid exposition and criticism of the political theory of Kant, a department of the critical philosophy which has hardly received adequate attention in this country. The writer's exposition of the subject should serve as a final confutation of the absurd allegation, put forward by the Rev. Bernard Vaughan and some others, whose zeal is not according to knowledge, that Kant is somehow responsible for the offences of his countrymen against humanity and international law in the present war. At the same time, Mr. Lamanna shows admirably how the fundamental dualism of Kant's moral theory, which leads him on the one hand to find the seat of all moral obligation in the "noumenal self," and on the other to regard every "empirical man" as little better than a potential criminal, has its counterpart in the reasons which lead him as a political theorist to deduce from the premisses of the *Declaration of the Rights of Man* a doctrine of non-resistance which might have satisfied Hobbes. In view of the tendency of many of our own disciples of Kant and Hegel to deny the very possibility of a right against the State, I should like to quote the weighty words of the author on page 122. 'The individual cannot grant to the State, any more than to other individuals, the power to violate his own essential prerogatives as a person, for he has not himself this power. As Rosmini says, law (*il diritto*) is the child of duty, and the power to fall short of his own duty can be conceded to no one.'

The second essay, a reprint of an article from *La Cultura Filosofica*, deals faithfully with the so-called Machiavellian doctrine that moral judgments are not applicable to acts of State, showing incidentally how completely the doctrine misrepresents the meaning of Machiavelli himself.

A. E. T.

L'Internazionale dei Lavoratori e la Alleanza. By Prof. G. TAIZZII.
Ostiglie [undated]. Pp. 64.

A thoughtful, if not very lightly written pamphlet in the form of an open letter to a socialist friend on the impossibility of really separating "class" from "national" aspirations and the practical difficulties which the international socialists are in danger of erecting for the realisation of their own ideal by cultivating an attitude of indifference to the national ideals of their fellow-citizens.

A. E. T.

Received also :—

Bernard Bosanquet, *Social and International Ideals*, London, Macmillan & Co., 1917, pp. ix, 325.

F. C. Constable, *Personality and Telepathy*, London, Kegan Paul, Trench Trubner & Co., 1911, pp. xv, 330.

A. N. Whitehead, *The Organisation of Thought*, London, Williams & Norgate, 1917, pp. vii, 228.

- Walter T. Marvin, *The History of European Philosophy*, New York, The Macmillan Co., 1917, pp. xiii, 439.
- William Smart, *Economic Annals of the Nineteenth Century, 1821-1830*, London, Macmillan & Co., pp. xxii, 584.
- Carl C. Brigham, *Two Studies in Mental Tests*, Psychological Monographs, Princeton and Lancaster Psychological Review Co., 1917, pp. 254.
- T. Pellatt, *Public School Education and the War*, London, 1917, pp. viii, 123.
- May Sinclair, *A Defence of Idealism*, Macmillan & Co., London, 1917, pp. xxi, 396.
- Studies in Psychology*, Contributed by Colleagues and Former Students of E. B. Titchener, Worcester, Mass., Louis N. Wilson, 1917, pp. 337.
- E. B. Titchener, *A Beginner's Psychology*, New York, The Macmillan Co., 1916, pp. xvi, 362.
- P. Coffey, *Epistemology or The Theory of Knowledge*, London, Longmans, Green & Co., 1917, pp. xiv, 374 ; viii, 376, 2 vols.
- Prof. G. M. Stratton, *Theophrastus and the Greek Physiological Psychology Before Aristotle*, London, Allen & Unwin, 1917, pp. 227.
- N. J. Melville, *Testing Juvenile Mentality*, Philadelphia and London, J. B. Leppincott Co., 1917, pp. vii, 140.
- Rev. W. Blissard, *The Economic Anti-Christ*, London, G. Allen & Unwin, 1917, pp. 258.

VIII.—PHILOSOPHICAL PERIODICALS.

PHILOSOPHICAL REVIEW. Vol. xxvi., No. 3. **B. Bosanquet.** 'The Relation of Coherence to Immediacy and Specific Purpose.' [Reply to Sabine. The primacy of coherence rests on the principle of implication, which is the core of inference. What is given is the whole varying world of experience; and the comprehensive and coherent real becomes, within such a world, a standard by which itself and the imaginary can be tested. In the motive of scientific curiosity, the impulse of the mind to know, all private motives and unique tensions are superseded.] **W. M. Urban.** 'The Knowledge of Other Minds and the Problem of Meaning and Value.' [There is an immediately intuitive knowledge of other minds, which carries with it evidence no poorer than that for physical objects. What is here known is 'inner' meaning or personality; and inwardness may have a common character simply because external and internal are not mutually exclusive in the world of values, as they are in the world of existents.] **R. F. A. Hoernlé.** 'The Mental and the Physical as a Problem for Philosophy.' [Physics and Psychology have a right to their own abstractions, but that is not to say that the spheres of the physical and the mental, scientifically defined, exhaust the universe for philosophy. Philosophically, mind is a distinctive form of activity exhibited by bodies of a certain structure; the Cartesian exclusiveness has long ago been cast out.] Discussion. 'Progress in Philosophical Inquiry and Mr. Lovejoy's Presidential Address.' (1) **E. Albee.** [Emphasises the technical uniqueness and relatively individual nature of philosophy.] (2) **C. M. Bakewell.** [Philosophy is an individual adventure with a certain cosmic sweep.] (3) **T. de Laguna.** [Philosophy has had very practical consequences. Philosophical problems are relatively fundamental, and disagreement is to be expected if philosophers are active.] (4) **W. E. Hocking.** [Co-operation is good; but philosophy has no fixed term, and history shows that only the greatest system-makers survive.] (5) **E. H. Hollands.** [Philosophy is personal in so far as it must take account of values and employs a constructive procedure. It has not to solve particular problems, but to think their results and all the real together.] Notices of New Books. Summaries of Articles. Notes.

PSYCHOLOGICAL REVIEW. Vol. xxiv., No. 1. **J. W. Bridges** and **L. E. Coler.** 'The Relation of Intelligence to Social Status.' [Tests by the Yerkes-Bridges point scale. Intelligence correlates highly (probably more highly for boys than for girls) with social status; if mental age were determining, the children of the professional group would enter school two years earlier than those of the unskilled-labour group.] **S. D. Porteus.** 'Mental Tests with Delinquents and Australian Aboriginal Children.' [Maze-tests give, for two groups of delinquent children, an average deficiency of 2 years 4 months, and 5 years 8 months; for aboriginal children (few of them full-blooded), 5 months only; for normal deaf-and-dumb children, 2 years, and for feeble-minded deaf-

and-dumb boys, 5 years 2 months.] **E. B. Titchener.** 'The Psychological Concept of Clearness.' [Traces the history of the concept in Wundt's system; replies to Britz' critique.] **S. B. Russell.** 'Compound Substitution in Behaviour.' [Selective reaction, simple substitution, the memorised series, and delayed reaction are all characterised by association; the association nerve-fibres register the frequency and recency of impulses, and in turn regulate the passage of impulses that provoke movement. A case of compound substitution (mental arithmetic) is a memorised series modified by suppression of movements, so that all stimuli concerned co-operate for the resultant response; delayed reaction is, of course, involved.] **W. S. Hunter.** 'The Delayed Reaction in a Child.' [Three-box tests of a girl (13 to 16 months), possessed neither of vocal nor (probably) of gesture language, confirm the importance of maintenance of orientation and of an intraorganic factor (probably kinæsthetic sensory ideas).]—Vol. xxiv., No. 2. **R. Dodge.** 'The Laws of Relative Fatigue.' [Mental fatigue cannot be defined in terms of work-decrement, for that may be due to intercurrent rhythms, residual excitation and rivalry, specific and trophic inhibition. True mental fatigue is always relative, owing (1) to the inconstancy of the stimuli (especially the inner stimuli) in mental work, and (2) to the interaction of competing paths. We may formulate two laws of relative fatigue: (1) within physiological limits, all fatigue-decrement in the results of work is relative to the intensity of the stimulus, and (2) in any complex of competing tendencies the relatively greater fatigue of one tendency will tend to eliminate it from the competition in favour of the less fatigued tendencies.] **E. C. Tolman.** 'More Concerning the Temporal Relations of Meaning and Imagery.' [Repetition of Moore's work with relatively untrained observers. Neither of the extreme positions can be maintained.] **A. I. Gates.** 'Experiments on the Relative Efficiency of Men and Women in Memory and Reasoning.' [Women are noticeably better in memory (immediate or delayed), men slightly better in reasoning. Both sexes prefer memory-work, but relatively more men are willing to exchange it for reasoning.] **E. L. Thorndike.** 'Individual Differences in Judgments of the Beauty of Simple Forms.' [The diversity of judgments whose average favours, e.g., the golden section, is really very great.] **A. P. Weiss.** 'Preliminary Report on the Relative Intensity of Successive, Simultaneous, Ascending and Descending Tones.' Discussion. **C. E. Ferree** and **G. Rand.** 'A New Method of Heterochromatic Photometry: A Reply to Dr. Johnson.' **S. C. Kohs.** 'The Stanford (1915) and the Vineland (1911) Revisions of the Binet Scale.'—Vol. xxiv., No. 3. **H. Carr.** 'The Nature of Mental Process.' [Urges that mental functions are psychophysical (at times neural) activities, and that psychology should study them in their entirety.] **W. S. Hunter.** 'A Reformulation of the Law of Association.' [The second member of an association may be and often, if not usually, is a sensory and not an imaginal process. Man's language sequences, in particular, are but the development of the animal form of sensory associations.] **S. I. Franz.** 'The Scientific Productivity of American Professional Psychologists.' [Statistics of the output of eighty-four persons representing forty-eight institutions during the decade 1906-1915.] **E. L. Thorndike.** 'The Psychology of Thinking in the Case of Reading.' [Under-potency and over-potency of elements, dislocation or disrelation of elements, and wrongness or inadequacy of connexions account for errors in thinking; the converse of these three mechanisms, for correct thinking. Hence there is no fundamental physiological contrast between fixed habits and reasoning.] **D. Starch.** 'The Similarity of Brothers and Sisters in Mental Traits.' [The resemblance is approximately as great in mental

as in physical traits; it seems to be greater in some traits than in others (further work is needed); it is no greater in the mental traits which are environmentally affected. Heredity is thus stronger than environment.] **E. K. Strong, Jun.,** and **E. P. Gilchrist.** 'A Method of Recording Errors in Form Board Tests.' Discussion. **L. J. Martin.** 'Introspection *versus* the Subconscious.' [Introspective data brought out only by the express instruction to introspect raise the question of the relation of consciousness to subconsciousness.] **G. M. Stratton.** 'The Mnemonic Feat of the "Shass Pollak".' [The 'Talmud Pole' is a memory expert who has a visual-topographical memory of the entire Talmud.]

BRITISH JOURNAL OF PSYCHOLOGY. Vol. vii., Part 4. **W. Lankes.** 'Perseveration' (with an introduction by C. Spearman). [A series of experiments of widely differing types, suggest the existence of a general factor other than general ability; probably the factor is Perseveration. But this Perseveration does not correlate with Perseverance, the quality of character; and this because the self can modify its innate tendency to Perseveration.] **George H. Miles.** 'The Formation of Projected Visual Images by Intermittent Retinal Stimulation.' [Intermittent excitation causes succession of changes in the projected image, and may result in a fusion of the most effective phases with the result that the projected image produced by intermittent stimulation shows a marked gain in intensity. Explanations of this and other phenomena are discussed.] **A. Wohlgeuth.** 'Simultaneous and Successive Associations.' [Experiments done with pairs consisting of a colour and a figure. Conclusions: simultaneous presentation was more favourable than successive. The more the members of a group were apperceived as a whole the stronger was their association with one another. In psychological memory proper (*i.e.*, not motor associations) all associations are due to simultaneity, either simultaneity of the experiences, or simultaneity of the succeeding experience with the subconscious phase of the preceding experience.] **N. Carey.** 'Factors in the Mental Processes of School Children—I. Visual and Auditory Imagery.' [High correlation between Imagery of different types. No tendency for memory of visually presented material to correlate highly with power of visual imagery; similarly with auditory imagery and words heard. No correlation between imagery and higher mental processes or with proficiency in ordinary school subjects—even very low correlation between painting and visual imagery.]—Vol. viii., Part 1. **Carveth Read.** 'The Psychology of Animism.' [Distinguishes Hyperphysical Animism and Psychological Animism, and discusses at length the Ghost-theory of the origin of animism, concluding with the evolution and dissolution of animism.] **Ernest Jones.** 'The Theory of Repression in its Relation to Memory.' [Maintains that the usual explanation of forgetting, *e.g.*, lack of interest, is inadequate and that all forgetting is due in part at least to repression, this being not only a tendency voluntarily to expel certain thoughts out of consciousness but also a tendency to prevent them from entering consciousness.] **Godfrey H. Thomson** and **Frank W. Smith.** 'The Recognition Vocabulary of Children.' [Estimate of the size of vocabularies of elementary school children by the dictionary test, show boys to be somewhat superior to girls in this respect between the ages of 12 and 15.] **Godfrey Thomson** and **J. Ridley Thompson.** 'Outlines of a Method for the Quantitative Analysis of Writing Vocabularies.' [Shows the plotting of an asymptotic curve indicating a decreasing number of new words as one takes new paragraphs of a given writer. Dickens' *Copperfield* is reread as an example.] **N. Carey.** 'Factors in the Mental Processes

of School Children—II., On the Nature of Specific Mental Factors.' [Various sensory-discrimination tests indicate no common factor of the nature of a general act of discrimination. There is a very small general memory-act factor; but in the memory of verbal material a change of content reduces the correlation more than does a change in the mode of presentation (*e.g.*, from visual to auditory). The quality described as "painstaking" is much more limited in its influence than is generally supposed.] **George H. Miles.** 'The Formation of Projected Visual Images by Intermittent Retinal Stimulation—II., Apparatus, Procedure and Results.' [Gives detailed account of conditions which apparently determine the development of projected images, including the influence of volition, movement of the eyes, etc. The relationship is discussed between the factors involved in the formation of the projected image and immediate visual memory.]

JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS. xiv., 3. **H. C. Brown.** 'Matter and Energy.' [Discusses whether atoms and electrons 'really exist' and answers, pragmatically, that they do in so far as they fulfil their scientific function. But like all scientific concepts they are results of a human reaction on nature, and the analysis which produced them need not be ultimate. For "resting points in analysis are determined by the needs of human action". At present "the atom is an entity in about the same sense as Congress"; and as any 'element' showing complexity in behaviour can probably be analysed further "it is highly doubtful whether our electron is as simple as now appears".] **J. F. Dashiell.** 'Spirit and Matter: A Philosophical Tradition.' [The traditional problem of spirit *versus* matter may be given vitality "by taking it as the antithesis between 'the interest in ideals (or the standards and guides to our endeavours) and the interest in data' (the starting-points and raw materials of our efforts)".] Report by **A. T. Poffenberger** on the N.Y. Branch of the American Psychological Association. xiv., 4 [not received]. **J. B. Watson.** 'Does Holt follow Freud?' **T. L. Davies.** 'The Contrast between Scientific Theory and the Demands of the Pragmatic Prescription.' **M. Eastman.** 'The Will to Live.' xiv., 5. **A. A. Goldenweiser.** 'Religion and Society' a Critique of Emile Durkheim's Theory of the Origin and Nature of Religion.' [Detailed and concrete criticism; it is argued *e.g.* that *mana* must be prior to totemism.] **J. M. Mecklin.** 'The Revival of the Ontological Argument' [by Galloway, Wobbermin, and especially Hocking. Hocking's argument is shown to resolve itself into the question of the cognitive value of the mystical experience. It is objected that this experience adds nothing to the content of knowledge and that the world is "strewn with dead gods" as the re-evaluation of experience proceeds.] xiv., 6. **H. W. Schneider.** 'The Theory of Values.' ["The value situation consists of (1) a valuable object, (2) an organism or activity to which it is valuable (or by which it is valued), (3) an end or purpose for which it is valuable." One of these factors has always been ignored. The value psychologists studied valuation *per se* and omitted the object valued and the specific end for which it was valued, and were at once charged with subjectivism by realists and absolutists, whose 'eternal' values were irrelevant to human purposes. "Of course, human values are relative to human activity and desire, but that is no ground for despising them as *merely* subjective. Of course, values are objective, both in that they are of objects and in that they are controlling and guiding factors of human experience; but why should value, therefore, be an eternal quality of objects independently of the relations of these objects to practical situations?" Experimental psychologists

similarly have failed to include the whole situation. They have tried to determine value in general, without asking 'value for what?' and so their results are not answers to genuine questions. "Value appears essentially as that quality of an object by virtue of which it becomes a means to an end. Moreover, means and ends are relative terms. The end, however, is not strictly a value—it is invaluable; and values, like facts, are neither true nor false, they simply *are*; it is valuation which is true or false." So too "that values control our conduct is not a moral ideal, but an empirical fact". But as they are chance social products, the need for changing them should not be forgotten.] **R. M. Yerkes.** 'Behaviorism and Genetic Psychology.' [An appreciative review of Hobhouse's *Mind in Evolution*, ed. 2.] **J. Dewey.** 'The Concept of the Neutral in Recent Epistemology.' [Distinguishes between (1) the neutral in a specified reference, and (2) the neutral as a constitutionally indifferent stuff. (1) is a logical sense which means that a certain distinction is simply inapplicable, and that certain terms may be used 'without prejudice'; (2) asserts an ontological doctrine. It is shown that the two senses have been confused, e.g., by James.] xiv, 7. **R. B. Perry.** 'Dewey and Urban on Value-Judgments. [Cf. xii, 19, 20, xiii, 17, 25: thinks that Dewey's 'paradox' that a practical judgment has for its object something of the reality of which it is a condition may be avoided by distinguishing between the possibility and the fulfilment, and criticises Urban's proofs that the value-judgment is different from all judgments of fact.] **N. H. Adlerblum.** 'A Reinterpretation of Jewish Philosophy.' [Finds in Jehuda Halevi and Ahad Ha'am Jewish forerunners of pragmatism.] **M. R. Cohen.** 'The Interests served by Law and the Methods of their Evaluation.' ["The great problem of the law is to determine the line between temporary and permanent interests, and to devise ways in which the former may be served without detriment to the latter."]

REVUE DE MÉTAPHYSIQUE ET DE MORALE. Jan., 1916. **G. Lanson.** 'Le déterminisme historique et l'idéalisme social dans l'*Esprit des Lois*.' [Montesquieu often asserts that social phenomena are almost independent of the voluntary acts of individuals and yet constantly gives directions for social reforms. He only meant that an individual can do little by isolated acts, and nothing even by laws unless he makes them fit into the customs and genius of the people.] **É. Meyerson.** 'La science et les systèmes philosophiques.' [Positivism is in theory the ruling philosophic doctrine of scientists; but in practice it should lead to a purely phenomenalist formulation of science, which certainly does not and probably cannot exist. Scientists think they do without metaphysics because (a) they rapidly and unconsciously pass from one view to another; and (b) the instinctive metaphysical view of all is similar.] **É. Gilson.** 'Art et Métaphysique.' **M. Winter.** 'Le Temps et la Mécanique héréditaire?' [A sketch of Volterra's method of treating physical problems by integro-differential equations, thus avoiding the assumption that the state of a system at any moment is completely determined by its state at a *finite* number of other moments. Important.] **D. Parodi.** 'La Force et le Droit.' [Criticism of Ruysen.]—Sept., 1916. **Ch. Andler.** 'Les origines philosophiques du pangermanisme.' [Traces the Protestant side of pan-Germanism through Schiller, Herder, Fichte, and Hegel; the Catholic through Schlegel on the one hand and Gœrres on the other. Hegel and Fichte make everything lead up to Luther and Frederic (the Protestant hero); Schlegel and Gœrres have to explain them away as unimportant aberrations. But in the end all arrive at the notion of the Germans as a chosen people.] **L. Robin.** 'Sur la concep-

tion épicurienne du progrès.' [The golden age was in the beginning ; both nature and man are degenerating. Invention is valuable so far as it enables man to wring necessities out of an ever more reluctant nature. But (a) it will be useless in the long run, and (b) in the meanwhile it produces desires for the needless and useless.] **B. Varisco.** 'Sur l'application des mathématiques à la physique.' [Mathematical formulæ express directly only the relations between the values of variables ; they omit the qualitative differences of the latter, and, in particular, the peculiarity of time.] **A. Reymond.** 'L'infini géométrique et l'intuition.' [The object of the article is to explain how points, lines, and surfaces at infinity can be treated as having definite numerical relations. It is admitted that the ordinary logical solution is *logically* satisfactory, but geometry cannot be wholly reduced to analysis. Geometrical intuition is distinct from sense-perception and in certain cases from imaginative representation, but it remains an essential factor. The entire similarity of all points necessitate that an indefinite straight line must be a closed curve in a space of at least two dimensions ; similar remarks apply to planes and volumes. To each point in a straight line will correspond one other symmetrical with it, and this is the point at infinity. The distance between the two cannot be measured by any unit that will measure distances in the neighbourhood of either.] **G. De Ruggiero.** 'La pensée italienne et la guerre.' [Effect of the war on the historic Italian parties. Contains an interesting criticism of German culture. When the Germans had something that other nations needed the other nations absorbed it readily ; when Germany has to force it on them we may be sure that they have outgrown the need for it. Culture is an acquaintance with results rather than a spirit of original thought. Italy does not despise what it owes to the Central Powers, but it will now make this factor its own and no longer tolerate it as a foreign body.] —Numero consacré à Malebranche. Jan., 1916. **M. Blondel.** 'L'anti-Cartésianisme de Malebranche.' [Shows by numerous examples that Malebranche's philosophic tendencies and interests were radically opposed in most respects to those of Descartes.] **E. Boutroux.** 'L'intellectualisme de Malebranche.' [M. was a convinced rationalist, but he held that reason could deal with religious and moral problems as well as mathematical and physical ones, and that the former were its highest exercises.] **P. Duhem.** 'L'optique de Malebranche.' [A most learned and interesting article in which the author shows from an elaborate study of the history of Optics that Malebranche was the first to give the modern theory of the connexion between colours and light-waves.] **R. Thamin.** 'Le Traité de Morale de Malebranche.' [There is an order of perfection which can be perceived by reason as well as the order of magnitudes. Faith is only reason made manifest to imperfect beings ; it will 'vanish into sight,' and, even in this life, we should substitute clear thinking for it so far as we can.] **Van Biéma.** 'Comment Malebranche conçoit la Psychologie.' [Malebranche denied the Cartesian view that we have fuller knowledge of the soul than of the body. He doubted whether we have rational deductive knowledge of ourselves at all. Hence he would naturally be disposed to make psychology a science of observation. In the main he did not do this, in spite of his own fondness for observation and his acquaintance with the theories of others. He preferred to deduce his psychology from his knowledge of the 'perfection of God'] **V. Delbos.** 'Malebranche et Maine de Biran.' [Malebranche rejected the feeling of activity as an illusion. Maine de Biran accepted it as a genuine revelation, and tried to refute the special argument used by Malebranche to discredit it.] **De Roustan.** 'Pour une Édition de Malebranche.' [No complete edition exists. The best is that of Geronde and Lourdoux,

but it is out of print, incomplete, and badly edited. There are still many problems of authorship in connexion with Malebranche; in particular the authorship of the *Traité de l'infini créé* is doubtful. M. Roustan tries to prove that it is not by Malebranche. The very existence of the *Éclaircissement sur quatre questions importantes* . . . (in reply to Arnould), and often attributed to Malebranche, is doubtful. M. Roustan will be glad to receive any communication relating to the bibliography of Malebranche at 73, rue Cardinal-Lemoine, Paris.]—Nov., 1916. **Charles Renouirer.** 'Pensées.' [Written in the last year of his life. Interesting estimate of Sainte-Beuve; severe criticism of Vauvenargues. Also political and historical reflexions.] **L. Rougier.** 'La démonstration géométrique et le raisonnement déductif.' [Opens with a synopsis of modern symbolic logic, and argues, against M. Goblot, that the fruitfulness of mathematical deduction does not depend on any appeal to intuition, but on the possibility of repeatedly defining new entities in terms of old ones, and of relations whose logical properties are given, and then of deducing all possible relations between these entities, their elements, and other entities that have previously been defined and treated in the system. The treatment of geometry is excellent.] **R. Lenoir.** 'L'Idéalisme de Taine.' **L. Couturat.** 'De l'abus de l'intuition dans l'enseignement mathématique.' [The best plan is to use axioms which can be illustrated intuitively, but then to insist on rigorous deduction.] **G. Belot.** 'La force du droit.' [Force, in political affairs, contrary to common opinion, is just as difficult to estimate as right. The justice of keeping faith over Belgium was a more certain fact than the power of Germany to crush Belgium. The essence of justice is ability to see the probable results of actions in society. In dealing with dead matter and with men of low intelligence foresight is possible by causal laws which take no account of reflective desire; in dealing with civilised men it is not.]

'SCIENTIA' (RIVISTA DI SCIENZA). Series ii. Vol. xix. April, 1916. **A. Mieli.** 'Il periodo pneumatico della chimica.' **E. Bouty.** 'La théorie cinétique des gaz. IIème Partie: Ses progrès et ses difficultés.' **E. Rabaud.** 'Les phénomènes embryonnaires et la phylogénèse.' **J. H. Rose.** 'The Future of Europe.' **C. A. Reuterskiöld.** 'Les lignes directrices du droit des gens après la guerre.' Book Reviews. 'Revue générale d'Indologie.' **A. M. Pizzagalli.** 'Les problèmes de la fable.' Review of Reviews. Chronicle. French translations of articles in Italian and English. Series ii. Vol. xix. May, 1916. **G. Colombo.** 'Le scienze fisiche e le loro applicazioni nel cinquantennio 1865-1915.' **G. Milhaud.** 'Le double aspect de l'oeuvre scientifique de Descartes.' [One would believe, at least at the first glance, that Descartes realised his programme by reconstructing, on the ruins of all that had been done before him, a wholly new science. But when we compare this kind of spontaneous generation with the great current that flows from the Greeks to Descartes, we see that, at bottom, Descartes was by no means a revolutionary. A very good article.] **A. Willey.** 'Pure Lines in Organic Evolution.' **A. H. Sayce.** 'The Assyrian Empire: a Lesson in History.' **R. Michels.** 'Il naufragio dell' "Internationale operaia" e l'avvenire.' Book Reviews. Review of Reviews. Chronicle. French translations of articles in Italian and English. Series ii. Vol. xx. Part 1. July, 1916. **A. Favaro.** 'La condanna di Galileo e le sue conseguenze per il progresso degli studi.' [The thesis of the Jesuit Adolf Müller in his book *Der Galilei-Prozess (1632-1633) nach Ursprung, Verlauf und Folgen* (Freiburg in Breisgau, 1900) that the Church, by the decree of 1616 and the condemnation of Galileo in 1633, did not give any blow to astronomical research, but helped science by calling attention to the

Copernican system, is shown in detail, especially by the conduct of Descartes, to be false.] **L. Houllévigüe.** 'Projections cathodiques et colloïdes.' [An interesting notice on the author's discovery of unexpected relations between two apparently independent classes of phenomena.] **A. Lalande.** 'Les rapports de la logique et de la psychologie.' [Logic is the normative science of the true and the false. That part of psychology called 'critical psychology' and of which the aim is to discover by analysis the 'laws of reason' in the Kantian sense, is, in so far as it is possible at all, relevant to logic. 'What is the notion of necessary implication of *b* by *a* if it is not the obligation for a thinking being not to deny *b* after having affirmed *a*? . . . All that the adversaries of psychologism say is valid in so far as the question is to show: (1) that logic is not a branch of psychology, an applied psychology; (2) that it tends towards an ideal radically opposed to physical or psychological experience. It is insufficient if the question is to show that logic can be shut up in itself and neglect the knowledge of the functions of the reason such as are exercised in reality. The thesis would be true of "pure logic," if pure logic were a realised or least realisable science; but we have seen that it is not.] **W. R. Scott.** 'On Repairing the Waste of War.' ['In the intense national pre-occupation upon national existence (as each nation conceives it) and in the grief of so many families for the fallen, the burden (of spending without producing) is not fully realised. Consciousness of it will come when, after the peace, life endeavours to return again to its former courses. Then the burden of present unproductive consumption in war will be felt, and in preparation for that time it is the duty of governments to endeavour in advance to adjust that burden to the capacity of those who have to bear it. Equitable adjustment of taxation and improved organisation of commerce and industry will do much to make people more capable of sustaining the load they will have to carry. In particular should we not learn something from what may be described as one of the paradoxes of the war, namely, that while there never has been a war in which material advantages have been so important, at the same time it is no less true that, conversely, there never was one in which immaterial wealth and even moral ideals were so supreme?'] **F. Virgili.** 'I principali effetti economici mondiali dell' interruzione degli scambi internazionali.' [Somewhat detailed figures. A good article.] **Book Reviews.** General Reviews. **S. Jankelevitch.** 'La crise de la science et les doléances des savants en Angleterre.' [On the need of scientific organisation as shown in recent correspondence and articles in *Nature* and *Science Progress*.] Review of Reviews. French translations of articles in Italian and English.

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